

lower-temperature cases are much lower than the estimates provided in the Supplement to the Draft EIS. These decreases are reflected in Final EIS Section 4.1.12 tables presenting operations and closure waste volumes.

The comment refers to the upper range of construction and demolition debris generated under the lower-temperature operating mode, 810,000 cubic meters compared to 150,000 cubic meters under the Draft EIS thermal load scenario. Additional waste would be generated from the construction and demolition of a surface aging facility and 4,500 dry storage vaults. DOE used updated data to recalculate construction and demolition debris for the Final EIS. The upper range estimated under the lower-temperature repository operating mode is much lower than the estimate provided in the Supplement to the Draft EIS.

#### **7.5.10 (13447)**

**Comment** - 010296 / 0032

Table 3-1 of the DSEIS provides comparative analysis of the various scenarios considered by DOE. The most noticeable impact, and probably of most imminent concern to Nye County is the volume of the waste and hazardous waste generated by the large excavation required for the LTOM [lower-temperature operating mode]. To assume that the entire Nevada Test Site will be available to DOE for Yucca Mountain operation for the next 50 to 325 years is an unfair and unrealistic assumption. Yucca Mountain Project should attempt to be as self-sufficient as possible in as short of a time frame as practical.

#### **Response**

Updated data were used to estimate the waste volumes for the Final EIS. The estimated maximum volumes of all waste types except low-level radioactive waste under the lower-temperature repository operating mode would decrease.

As discussed in Section 4.1.12 of the EIS and Section 3.1.12 of the Supplement to the Draft EIS, if the repository was recommended and approved, DOE currently plans to dispose of waste streams onsite with the exception of low-level radioactive waste at the Nevada Test Site (NTS) and hazardous waste at a commercial facility. However, DOE acknowledges that if a landfill for disposing of nonhazardous waste is not constructed onsite, sanitary and industrial solid waste and construction and demolition debris may be transported to NTS for disposal.

There are uncertainties with regard to predicting events that are as far in the future as 300 years and DOE recognizes that low-level radioactive waste disposition might need to be revisited at some point in the future. If that need occurs, waste disposition proposals would receive National Environmental Policy Act reviews. However, DOE believes that disposition at the NTS is a reasonable assumption because the low-level radioactive waste volume estimated for the repository through closure is well within the disposal capacity of the current disposal facility even with NTS being a DOE regional disposal facility (see Section 8.2.12.1). Furthermore, DOE's *Current and Planned Low-Level Disposal Capacity Report* Revision 2 notes that "NTS has the capability of expanding operations to accommodate disposal of larger LLW [low-level radioactive waste] volumes. Given the site conditions and performance attributes of disposal facilities at the NTS, the maximum expandable volumetric capacity is limited only by the size of the usable disposal land at the NTS. This usable area is expected to greatly exceed the volume of DOE LLW requiring disposal" (DIRS 155856-DOE 2000).

### **7.5.11 ENVIRONMENTAL JUSTICE/NATIVE AMERICAN ISSUES**

#### **7.5.11 (52)**

**Comment** - 14 comments summarized

Commenters criticized the DOE methodology that was used to analyze environmental justice. Some commenters stated that the Draft EIS approach of using a two-staged assessment masks significant impacts to minorities and low-income populations. Commenters stated that the analysis should have first identified the location of minority and low income communities, then determined if there would be negative impacts disproportionate to them. Instead, the Draft EIS first identified impacts to the general population and then determined whether the impacts would disproportionately impact minority or low income communities. Commenters stated that the significance to these communities is not measured by this methodology. Commenters stated that neither specific locations of affected communities were identified nor were specific characteristics within affected communities addressed. Another commenter questioned that if no baseline analysis of existing threats in the affected minority or low-income population was completed, then how could DOE determine whether the impacts from nuclear waste transportation

would be disproportionate to these communities. A commenter stated that because the discussion of environmental justice was restricted to an analysis based on the Bureau of Census block group data, the specific locations of minority or low-income populations were not identified. The commenter noted that in a state like Nevada this was problematic because of the relatively large geographic size of the Nevada census block groups.

### **Response**

As required by Executive Order 12898, DOE performs environmental justice analyses to identify and address, as appropriate, the potential for its actions to cause disproportionately high and adverse impacts to minority or low-income populations. The approach to environmental justice analysis is consistent with DOE's own guidance, as well as that of the Council on Environmental Quality. The goal of this approach is to identify whether any high and adverse impacts would fall disproportionately on minority and low-income populations. The approach first analyzes the potential impacts on the general population as a basis for comparison. Second, based on available information, the approach assesses whether there are unique exposure pathways, sensitivities, or cultural practices that would result in high and adverse impacts on minority and low-income populations. If such impacts would be high and adverse, the approach then compares the impacts on minority and low-income populations to those on the general population to determine whether any high and adverse impacts fall disproportionately on minority and low-income populations. Therefore, if high and adverse impacts on minority or low-income populations would not appreciably exceed the same type of impacts on the general population, no disproportionately high and adverse impacts would be expected.

In response to comments, DOE reevaluated available information to determine whether the Draft EIS overlooked any unique exposure pathways or unique resource uses that could create opportunities for disproportionately high and adverse impacts to minority and low-income populations, even though the impacts to the general population would not be high and adverse. Additional unique pathways and resources were identified and analyzed, although none revealed a potential for disproportionately high and adverse impacts. For example, DOE estimated the potential health impacts from a subsistence diet based primarily on game taken from lands near the repository exclusion areas and concluded that high and adverse health and safety impacts would be unlikely.

DOE does not believe it necessary to consider population characteristics on a community-by-community basis to determine potential public health and safety impacts from the transportation of spent nuclear fuel and high-level radioactive waste. The EIS analyzed potential health effects of air emissions and doses from exposure to radioactive materials during routine (incident-free) transport. The EIS estimated the impacts from air emissions to be 1 emissions-related fatality. The EIS also estimated that the 24-year national campaign would cause fewer than about 3 latent cancer fatalities among the general public, and fewer under the preferred, mostly rail, scenario. Although many people would be exposed nationwide over a long campaign, the radiation dose to any exposed individual would be very low. Therefore, because there could be no disproportionately high and adverse impacts on low-income or minority populations, it is not necessary to examine the composition of the population along existing transportation corridors to conclude that the potential public health and safety effects from exposure to radioactive materials during routine exposure do not implicate environmental justice concerns. Only if a severe accident were to occur that resulted in release of radioactive materials would it be possible for the affected population to sustain high and adverse health effects, but the probability of such an event occurring is remote, so the overall associated risk to the general public is low.

To identify minority and low-income communities in the region of influence, DOE analyzed the Bureau of the Census population designation called "block groups." DOE identifies block groups where the percentage of minority or low-income residents is meaningfully greater than average. For environmental justice purposes, the identified block groups are minority or low-income communities. The 1990 census characterized about 10 percent of the people in Nevada as living in poverty (DIRS 103120-Bureau of the Census 1992). The analysis of incident-free transportation and the risks from transportation accidents (the maximum reasonably foreseeable accident scenario would have 2.3 chances in 10 million of occurring per year) would not present a large health or safety risk to the population as a whole, or to workers or individuals along national transportation routes. The low effect on the population as a whole also would be likely for any segment of the population, including minorities, low-income groups, and members of Native American tribes.

DOE also has updated and refined information germane to its environmental justice analysis. The EIS now includes, for example, additional and more detailed mapping of minority populations, and additional mapping and information

that describes the proximity of tribal lands and cultural and ceremonial areas to rail corridors in Nevada. Based on the additional information and resulting analysis, DOE has concluded that disproportionately high and adverse impacts from the construction and operation of a branch rail line or intermodal transfer facility would be unlikely.

#### **7.5.11 (1431)**

##### **Comment** - EIS000377 / 0001

The transportation of high-level nuclear waste and its effects on tribal government's economy, health, safety, and welfare is a matter of great and ever-increasing concern. To address these concerns, tribal governments must be recognized and treated as effective units of government, perhaps separate from state and county governmental bodies. Such a designation would recognize the sovereign right to self government and the government-to-government relationship between the tribes and our federal government.

Tribal governments would require with that recognition, federal support from the Department of Energy in the form of funding, which would enable them to participate in a meaningful way, rather than as a lesser entity represented by some other authority such as a state or county government. Such a voice may be deemed more legitimate by Federal Nuclear Waste Councils and Departments. This would certainly enhance tribal impact relative to concerns on Advisory Councils for Nuclear Wastes and Department of Energy meetings for the Mountain repository.

Recognition must be given to each tribe within Inyo County, thereby reflecting the individual nature and right to self-government of each tribe. That determination also reflects to all effective units of tribal government along transportation routes, regardless of what state they may be in.

Memorandums of understanding need to be established which are effective and workable, creating good relationships between the tribes and federal government and must be adopted and implemented at the earliest stages possible. These MOUs should have been in place or thought about, constructed, years ago. The refusal by the Department of Energy to establish MOUs addressing affected tribes' concerns and resulting public endangerment was demonstrated along the nuclear waste transportation routes to the New Mexico WIPP site.

My concern is in the close proximity to the Yucca Mountain site is the Timbisha land acquisitions, should they occur.

Tribal governments need assistance, not should the -- not at the time that the site may be established or an alternative be established, but should be established now and should have been established earlier, assistance to establish nuclear accident response teams, to address accidents in proximity to tribal ancestral homelands, developed lands, water shed, affected aquifers, and atmospheric contamination.

At present, I say this as a private citizen, counties are somewhat hesitant due to the adversarial relationships over the hundreds of years, since their inception, to recognize tribal government needs and to share the money that actually is to address those tribal governments needs as well as the general public. These items of concern have either been omitted from the DEIS or simply disregarded. The DOE's immediate attention is required and will hopefully reflect respectful attention to the affected units of tribal governments.

##### **Response**

The NWSA recognizes the role of tribal governments. Section 180(c) of the Act requires the Secretary of Energy to provide technical and financial assistance and funds to states for training public safety officials of appropriate units of local government and Indian tribes through whose jurisdictions the Secretary plans to transport spent nuclear fuel or high-level radioactive waste. The training must cover both procedures for safe transport and for dealing with emergency response situations. DOE will fully implement this and all other provisions of the Act. Section 180(c) requirements are discussed in detail in Section M.6, of the EIS.

The EIS (Section 3.1.6.2.2) recognizes that Tribes are separate entities from state and local governments. In Section 3.1.13 of the EIS, DOE identifies the minority or low-income populations in the State of Nevada in relation to Yucca Mountain and the alternative rail corridors and heavy-haul truck routes. Section 3.2.2.1.6 acknowledges the presence of Native American communities in at least two of the candidate rail corridors that are under consideration. DOE has also included maps of the routes used in the transportation analysis that show Tribal boundaries in relation to the site and the transportation corridors (see Appendix J of the EIS). Section 6.3.4 addresses environmental

justice impacts in Nevada as a result of the shipment of spent nuclear fuel and high-level radioactive waste to the proposed repository. The EIS identifies rail as the preferred mode of transportation. However, none of the candidate branch rail lines that would be used for transportation of either spent nuclear fuel or high-level radioactive waste runs through Inyo County. Should spent nuclear fuel and high-level radioactive waste be transported through Inyo County, the State of California, Inyo County and any affected Indian tribes would be potentially eligible for technical and financial assistance as provided by Section 180(c).

The NWSA includes provisions for tribal involvement in the proposed repository program. Sections 117, 118, and 180 include various measures that would require DOE to deal directly with tribes rather than through the State or local governments. Section 117(c) authorizes the Secretary of Energy to enter into written binding agreements with any affected Indian tribe regarding participation in the site characterization program for a repository. Such agreements would also govern preparation of impact reports and requests for technical and financial assistance for any affected Indian tribes. Sections 118 and 180 also provide funding for related tribal activities or expenses under certain circumstances. DOE has conducted regular interactions with representatives of the tribes holding membership in the Consolidated Group of Tribes and Organizations, which consists of officially appointed tribal representatives who are responsible for presenting their respective tribal concerns and perspectives regarding Yucca Mountain and the repository program to the Department.

Section 8.1.2.2 of the EIS discusses the Timbisha Shoshone land acquisitions and acknowledges that the Carlin and Caliente Corridor rail implementing alternatives and the Caliente heavy-haul truck implementing alternative could intersect or affect land that is part of the recently designated Timbisha Shoshone Trust Lands at Scottys Junction, Nevada. Some of the lands that is being transferred to the Timbisha Shoshone Nation could have some associated commercial use; however, this use would be consistent with the designations for the areas, and developments would be restricted to maintain the natural resources of the land.

#### **7.5.11 (1882)**

##### **Comment** - 010279 / 0013

In the Environmental Justice Section (p. 3-16), the SDEIS ignores the Yucca Mountain project's disproportionate impacts to the Timbisha Shoshone Tribe, whose Trust lands are either in the path of future radioactive contaminants (Furnace Creek Parcel) or within a proposed rail corridor for Yucca Mountain (the Carlin/Caliente Bonnie Clair Option which bisects the Scotty's Junction Trust Parcel). These impacts should be stated in the SDEIS because they were ignored in the DEIS.

##### **Response**

DOE has updated and refined information germane to its environmental justice analysis. The analysis found that construction and operation of a branch rail line in the Bonnie Claire Alternate of the Caliente or Carlin Corridor would restrict access across the Scottys Junction parcel of the Timbisha Shoshone Trust Lands, potentially limiting development of the lands as proposed by the Tribe. Section 6.3.4 of the EIS discusses environmental justice associated with the transportation of spent nuclear fuel and high-level radioactive waste.

#### **7.5.11 (2734)**

##### **Comment** - EIS000709 / 0008

There is also this curious category called "environmental justice" in the EIS. An important aspect of this was ignored in the transportation options involving Lincoln County and Caliente in particular. Because of the environmental injustice suffered by the people of Lincoln County as a result of atmospheric nuclear bomb testing in the 1950s, Lincoln County should be exempt from any shipments of nuclear waste. It is well-documented that the Federal Government lied about the levels and extent of radioactive fallout and health risks to residents. Subsequently, the Government has admitted fault and liability by remunerating the families of victims who died of certain types of cancers known to be caused by radiation.

##### **Response**

Chapter 3 discusses potential radiological doses from past weapons testing at the Nevada Test Site. The EIS analyzed potential public effects of both routine (incident-free) transportation of radioactive materials and transportation accidents involving radioactive materials. In response to comments, DOE has considered locations at which individuals could reside nearer to the rail corridors and heavy-haul truck routes in Nevada as a way of representing conditions that could exist anywhere in affected communities. For purposes of analysis, DOE assumed

that a maximally exposed individual could reside or work as close as 4.9 meters (16 feet) to a heavy-haul truck route and 30 meters (98 feet) to a rail corridor. During the 24-year period of repository operations, if each shipment of spent nuclear fuel and high-level radioactive waste passed by these maximally exposed individuals, they would receive an estimated dose ranging from about 2 millirem (increased fatal cancer probability of 2 in 100,000) for heavy-haul shipments.

These exposures would be well below those received from natural background radiation, would not be discernible even if corresponding doses could be measured, and would not add measurably to other impacts that an individual could incur. For comparison, the lifetime likelihood of an individual incurring a fatal cancer from all other causes is about 1 in 4.

#### **7.5.11 (3622)**

**Comment** - EIS001101 / 0003

The DEIS provides no response to our Native Americans' concerns about the disproportionately high and adverse impact on low-income populations.

#### **Response**

DOE performed the environmental justice analysis to identify and address, as appropriate, the potential for its actions to cause disproportionately high and adverse impacts to minority or low-income populations. The approach first analyzes the potential impacts on the general population as a basis for comparison. Second, based on available information, the approach assesses whether there are unique exposure pathways, sensitivities, or cultural practices that would result in high and adverse impacts on minority or low-income populations, including Native Americans. If such potential impacts would be high and adverse, the approach then compares the impacts on minority and low-income populations to those on the general population to determine whether any high and adverse impacts fall disproportionately on minority and low-income populations.

In response to comments, DOE reevaluated available information to determine whether the Draft EIS overlooked any unique exposure pathways or unique resource uses that could create opportunities for disproportionately high and adverse impacts to minority and low-income populations, even though the impacts to the general populations would not be high and adverse. Additional unique pathways and resources were identified and analyzed, although none revealed a potential for disproportionately high and adverse impacts.

#### **7.5.11 (4327)**

**Comment** - EIS001222 / 0006

I recommend that this proposal be dropped immediately and permanently for the following reason:

Most of the rout routes along which the radiation will be shipped have a disproportionately high population of minority groups relative to the population as a whole. Hence, the shipments are a form of environmental racism. The Clinton administration has committed to ending environmental racism; thus the shipments are in direct violation of policy.

#### **Response**

DOE fulfills the requirements of Executive Order 12898 by looking first at whether the impacts on minority and low-income populations would be high and adverse, and then whether any potential high and adverse impacts would fall disproportionately on such populations. As discussed below, it is not necessary to examine the composition of the general population residing along existing spent nuclear fuel and high-level radioactive waste transportation corridors before DOE can reasonably conclude that there would be no disproportionately high and adverse impacts to minority and low-income populations from the transportation of radioactive materials.

The EIS analyzed potential public health effects of routine (incident free) transportation of radioactive materials and transportation accidents involving radioactive materials. The EIS estimates the impacts from air emissions from routine transportation to be 1 emissions-related fatality. The EIS also estimates that the 24-year national transportation campaign would cause fewer than about 3 latent cancer fatalities among the general public, and fewer under the preferred, mostly rail, scenario. Although many people would be exposed nationwide over a long campaign, the radiation dose to any exposed individual living along a transportation route would be very low. In this context, DOE does not consider such impacts to be high. Also, DOE does not know of a plausible mechanism

under these circumstances whereby low-income or minority populations could incur high and adverse impacts when the general public does not.

**7.5.11 (4793)**

**Comment** - EIS001475 / 0010

So these are concerns, and I'm talking the way I am because I don't have a lot of money. I don't have just -- just stay here and say a couple sentences, and it's okay because everything's been approved. They've got everything paid. Where I'm talking to you is from who I am as a Native American, and my children, for those people that can't speak for themselves that has no voice. Our leaders, they're the one that's supposed to protect us. DOE, the government, BIA [Bureau of Indian Affairs], Secretary of Interior, they're all supposed to be protecting us.

**Response**

The EIS describes the potential beneficial and adverse environmental effects of the proposed Yucca Mountain Repository in terms that include environmental and human effects. DOE has developed the EIS consistent with the NWPA and the National Environmental Policy Act. As such, the information and studies are available to the public and decisionmakers for their consideration and action.

**7.5.11 (4963)**

**Comment** - EIS001318 / 0003

Have your tests found the Nevada site in Shoshone Indian land safe? Have you the right to destroy Indian land?

**Response**

DOE has conducted the site characterization program for the proposed Yucca Mountain Repository for approximately 14 years. This program assesses the proposed repository site against specific technical criteria for suitability and safety for potential spent nuclear fuel and high-level radioactive waste disposal in a deep underground repository.

The program is designed to achieve and maintain compliance with public health, safety and environmental regulations. DOE has an active relationship with Federal, state, and local regulatory officials to ensure all appropriate regulatory permits and approvals are in place for project activities.

The Federal Government owns and controls the Yucca Mountain land available for a repository. Although the Western Shoshone people have maintained that the Ruby Valley Treaty of 1863 gives them rights to the land upon which Yucca Mountain is located, a 1985 U.S. Supreme Court decision [United States v. Dann, 470 U. S. 39 (1985)] held that the Western Shoshone claim to land associated with the Ruby Valley Treaty has been extinguished, and that fair compensation has been made.

**7.5.11 (4999)**

**Comment** - EIS001441 / 0003

The Ely Shoshone Tribe believes that safety and health of the Indian people and Tribal resources within Nevada will be a greater risk if the Yucca Mountain Project goes forward. This is true due to the fact that while the state and countries prepare for the risk associated with the transportation and storage of radioactive material. Tribal Governments remain unprepared.

The main reason for this situation and the disproportionate effects from the Yucca Mountain Project on Indian people and resources is that DOE has provided financial assistance to the State of Nevada, Nevada Counties, and one California County, but Indian Tribes located within those same geographical boundaries have been refused similar assistance. Thus, while state and county have used the millions of dollars which they have received from DOE so they could learn about the problems associated with the Yucca Mountain Project and participate in addressing those problems, Tribes have not had an equal opportunity to do so. This has resulted and will continue to result in a disproportionate impact of the Yucca Mountain Project to Indian Tribes and resources located within Nevada.

DOE's refusal to provide the financial assistance to Tribes that have been provided to state and county governments violated federal law.

**Response**

The NWPA requires that specific Nevada counties, one county in California, and the State of Nevada be funded for certain oversight activities associated with the repository program. DOE has not yet acted to implement Section 180(c) of the NWPA because such action could only occur after the Yucca Mountain site has been approved for a nuclear waste repository; therefore, the timing for initiating any emergency preparedness processes is premature. As noted in Section M.8, about five years prior to the beginning of shipments, DOE anticipates knowing the states and tribal lands through which the shipments would travel, even if exact routes had not been selected. Using this information, DOE would notify those jurisdictions about their potential eligibility for the Section 180(c) program. At that time, affected states and tribes could present proposals to DOE for grants to determine their respective needs for training of safety officials. Section M.6 of the Final EIS describes the process for implementing Section 180(c) of the Nuclear Waste Policy Act.

**7.5.11 (5274)**

**Comment** - EIS001887 / 0028

The treatment of Native American issues and impacts in the Draft EIS is entirely inadequate. The Draft EIS ignores potential impacts to Native communities from the transportation of spent fuel and HLW, both in Nevada and nationally. For Native American interests in Nevada, it presents a sanitized section on “Native American Views of the Affected Environment,” but fails to reflect the strong and ubiquitous opposition to the Yucca Mountain project on the part of Native peoples in Nevada and California.

**Response**

The transportation analyses in the EIS evaluate impacts to people along the transportation routes, including Native Americans, both nationally and in Nevada. Chapter 6 and Appendix J of the EIS analyze health impacts of incident-free (routine) transportation and of transportation accidents. The EIS considers air emissions and doses from exposure to radioactive materials during routine transport. The EIS estimates the impacts from air emissions to be 1 emissions-related fatality. The EIS also estimates that the 24-year national transportation campaign would cause fewer than about 3 latent cancer fatalities among the general public, and fewer under the preferred, mostly rail, scenario. Although many people would be exposed nationwide over a long campaign, the radiation dose to any exposed individual would be very low. DOE does not know of a plausible mechanism under these circumstances whereby low-income or minority populations could incur high and adverse impacts when the general public does not. The EIS estimates that the 24-year national campaign would cause fewer than 5 deaths among the general population from accidents. Similarly, DOE does not know of a plausible mechanism under these circumstances whereby low-income or minority populations could incur high and adverse impacts when the general public does not.

During the preparation of the EIS, DOE interacted with Native American tribal representatives on a range of topics of interest to assess their viewpoints and perspectives. In addition, DOE supported the American Indian Writers Subgroup of the Consolidated Group of Tribes and Organizations in its preparation of *American Indian Perspectives on the Yucca Mountain Site Characterization Project and the Repository Environmental Impact Statement* (DIRS 102043-AIWS 1998). The results of this report are included in the EIS. The EIS discusses the Native American perspectives of the transportation of spent nuclear fuel and high-level radioactive waste in Section 4.1.13.4. Other examples of Native American viewpoints are in Sections 3.1.6.2.1, 3.1.6.2.2, and 4.1.5.2. The EIS acknowledges the Native American opposition to the siting of a repository at Yucca Mountain.

**7.5.11 (5440)**

**Comment** - EIS001660 / 0005

The DEIS inadequately analyzes the project impacts in relation to environmental justice in Nevada as well as nationally. It relies on outdated census data for Nevada, and concludes that impacts to minority and low income individuals will not be disproportionately adverse. Since individuals who reside in rural areas are often of lower income, Mineral County disagrees. Because of the nature of rural life, communities are dispersed, rather than concentrated. Given the limited political power of rural communities, they are often targeted for unwanted projects (projects which are dangerous, hazardous, and which no other area would tolerate). DOE’s risk models are based on avoiding urban areas, and presume that risks from the project should be borne by rural individuals.

Mineral County understands the President’s Executive Order (February 16, 1994) to mean that the DOE should consider the effects of past programs and policies on communities, as well as additional impacts of the Yucca

Mountain Project. With regard to public health impacts from exposure to radiation the DOE must go beyond the minimal analysis in the DEIS. Rural low income populations received damaging doses of radiation in the 1950s and 1960s from aboveground and underground nuclear weapons tests conducted by the DOE's predecessor, the Atomic Energy Commission. The DOE must take these disproportionately high adverse health and environmental impacts of its programs, policies, and activities into consideration.

### **Response**

DOE implements its responsibilities in relation to environmental justice through its "Environmental Justice Strategy [of] Executive Order 12898," (April 1995). This strategy lists four goals: (1) identify and address DOE programs, policies, and activities that might have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations; (2) enhance the credibility and public trust of DOE by making public participation a fundamental component of all program operations, planning activities, and decisionmaking; (3) improve research and data collection methods related to human health and the environment of minority and low-income populations by incorporating full characterizations of risks, including the identification of differential patterns of subsistence consumption of natural resources among such populations; and (4) further Departmental leadership by integrating environmental justice criteria, as appropriate, with activities and processes related to human health and the environment. The DOE environmental justice methodology brings together results of analyses from technical disciplines that focus on consequences to certain resources that could affect human health or the environment to determine disproportionately high and adverse effects on minority and low-income populations.

The Supplement to the Draft EIS and Final EIS use Nevada population data that are consistent across technical areas and that directly reflect data developed by and received from county and state officials. In response to comments, DOE has updated its population estimates in the regions of influence to reflect the most recent state and local information, as well as the Bureau of the Census 2000 population summary data for Nevada. For the repository and transportation-related regions of influence, DOE performed Regional Economic Models, Inc. (REMI) simulations to establish an updated population baseline by accounting for population estimates and projections provided by county governments. In the absence of county information, DOE used population estimates and projections from the Nevada State Demographer's Office. The updated population baselines were then used to estimate populations for Clark, Nye, and Lincoln Counties and the Rest of Nevada through 2035. These population projections were compared and adjusted to the 2000 Census population summary data. In this way, model population projections were reflected the best available information.

To update the health and safety analyses associated with transportation in Nevada, DOE used the baseline population for each county in the region of influence and forecast to 2035 to scale impacts from results based on the 1990 Census. For example, if a county's population was estimated double from 1990 to 2035, DOE assumed that the population along the associated rail corridor also would double and scaled the radiological impacts accordingly.

For other Nevada counties other than Nye, Clark, and Lincoln, DOE used Nevada State Demographer projections (DIRS 155350-State of Nevada 1999) as the basis for the population projections it used in analyses of accidents near transportation corridors and for health effects modeling. The Department obtained estimates of historic populations of towns and cities in Nevada from the State Demographer's Office or from county documents, as appropriate. Table 6-2 of the EIS lists DOE estimates for radiological impacts to the public in Nevada of incident-free transportation and transportation accidents for shipments of spent nuclear fuel and high-level radioactive waste to Yucca Mountain. Table 8-60 lists cumulative radiological and nonradiological impacts of transporting radioactive materials in the United States from 1943 to 2047. Section 3.1.8.2 discusses the estimated annual radiation dose to a hypothetical individual in Springdale, Nevada, from airborne radioactive materials from past nuclear weapons tests at the Nevada Test Site. In addition, Section 3.1.8.2 states DOE has made quantitative estimates of offsite doses from releases from past weapons testing activities at the Nevada Test Site (DIRS 146592-Black and Townsend 1998). In response to public comments, Section J.4 of the EIS now contains maps showing routes used to analyze impacts and presents estimated radiological and nonradiological impacts for each state. This is in addition to the route maps that were already included in the Draft EIS (see Section 2.1.3.2 for national routes and Section 2.1.3.3 for Nevada maps).

Based on the information in the EIS, DOE has concluded that the cumulative impacts of proposed future transportation activities, past nuclear weapons testing, and other Federal and private programs involving transportation of radioactive materials in Nevada would be small.



#### **7.5.11 (5534)**

**Comment** - EIS001887 / 0183

Page 3-68; Section 3.1.6.2 - Native American Interests

The discussion also fails to recognize that the Native American tribes in the immediate vicinity of the Yucca Mountain project area and along potential transportation routes are, for the most part, economically disadvantaged. Reservations and communities in Nye, Lincoln, and Inyo counties are rural and isolated and either lack a land base or have land bases too small to support their populations by ranching or other locally common means. A large number of people are unemployed, underemployed, and/or are living below the poverty level. Educational levels have improved in recent years, but without job opportunities in local communities, people must leave to take advantage of their training. Any negative statewide economic impacts associated with or caused by the repository or repository-related nuclear waste transportation will have a disproportionate impact on such communities because of these depressed baseline conditions.

#### **Response**

DOE used the methodology discussed in Section 4.1.13.1 of the EIS to assess potential environmental justice impacts of transporting spent nuclear fuel and high-level radioactive waste from generator sites to Yucca Mountain. This methodology applies two tests in determining the potential for environmental justice impacts. The first test assesses the potential for impacts to the environment or to human health and safety. The second test assesses the potential for high and adverse environmental impacts (including socioeconomic impacts) to fall disproportionately on minority or low-income populations. DOE concluded that for Native American tribes in the immediate vicinity of the Yucca Mountain site and living along transportation routes, the impacts to human health and safety from transportation of spent nuclear fuel and high-level radioactive waste would not be high for any individuals, including low-income and minority populations.

DOE did not analyze whether the state economy, or consequently, certain subsections of the economy, could suffer a downturn due to stigma effects of the repository and transportation of spent nuclear fuel and high-level radioactive waste. Such hypothetical impacts would be based on how individual members of the public, or the public collectively, could or would respond to those actions. Such analysis requires speculation because it does not necessarily depend on actual physical effects on individuals or the public at large. Moreover, the potential indirect effects of the proximity of a repository on tourism or quality-of-life indicators would vary by individual, cannot be precisely defined, and are not reasonably foreseeable. For this reason, DOE addressed but did not attempt to quantify risk perceptions or stigma in the EIS.

However, DOE will continue to work with local communities and Tribal nations to understand and mitigate potential negative perceptions of DOE operations. These activities include the development and presentation of factual information regarding the actual (rather than perceived) risks associated with the construction, operation and monitoring, and eventual closure of a repository at Yucca Mountain and related transportation activities.

#### **7.5.11 (5629)**

**Comment** - EIS001887 / 0253

Page 4-81; Section 4.1.13 - Environmental Justice

The Draft EIS concludes that, because DOE has assumed that no significant environmental or health and safety impacts exist within the Proposed Action, no “disproportionately high and adverse human health or environmental effects on minority and low income populations” will occur. Unfortunately, this approach does not include a thorough analysis of income scenarios along waste transportation routes, either in Nevada or along national routes identified in the Draft EIS. In addition, if DOE had utilized updated census figures for North Las Vegas, Nye County, Lincoln County, Esmeralda County, White Pine County, Inyo County, etc., along with current figures related to low-income and poverty level status in the U.S., a significantly larger percentage of Nevada and U.S. citizens might have come under the “low-income” or “poverty” umbrella for purposes of an Environmental Justice analysis.

First, one must assume there will be adverse impacts to worker and public health and safety as a result of the Proposed Action. At the very least, the Department of Energy should have made a more concerted effort “to collect, maintain and analyze information assessing and comparing environmental and human health risks...[and] use this

information to determine whether their programs, policies and activities have adverse health or environmental effects on environmental justice populations.” (Executive Order 12898, February 11, 1994) What is missing in the DOE health impacts analysis process is any apparent attempt to collect or maintain information over the long-term, or to conduct any kind of information system formation, other than computer modeling and projections. The “no environmental justice impacts” assumption was based on the original flawed assumption of no adverse health impacts.

Further, in the case of DOE’s use of outdated economic and census data, the 1994 Executive Order on environmental justice clearly states that “federal agencies shall share information and eliminate duplication of effort through use of existing data systems and cooperative agreements among federal agencies and with state, local and tribal governments.” (emphasis added) The State of Nevada, Clark County, Lincoln County and Nye County all offered updated databases, the counsel of experienced socioeconomic analysts and technicians, and current income reporting data to the Department of Energy. DOE steadfastly and repeatedly refused to use the information and, in violation of Executive Order 12898, did not cooperate with state, local, and tribal governments in its determination of the presence or lack of an environmental justice impact within the Proposed Action.

In addition, EO 12898 pointedly states that any federal agency conducting an environmental justice analysis must “...ensure that public documents relating to human health or the environment, are concise, understandable, and readily accessible to the public.” DOE’s Yucca Mountain health impacts analysis is neither concise nor understandable and, therefore, does not provide an appropriate legal basis for determining the presence or absence of environmental justice impacts.

The current U.S. measure of poverty was instituted in the early 1960s and “no longer provides an accurate picture of the differences in the extent of economic poverty among population groups or geographic areas of the country, nor an accurate picture of trends over time.” (Measuring Poverty: A New Approach. The Panel on Poverty and Family Assistance, 1998. National Academy Press, Washington, DC)

The Panel stated in its recommendations that “We believe a reasonable range for the initial threshold for the reference family of two adults and two children is \$13,700 to \$15,900 (in 1992 dollars).” DOE used \$12,674 for the same family size for the analysis in the Draft EIS. This same panel concluded that “the current measure does not accurately reflect differences in poverty across population groups and across time. We conclude that it would be inadvisable to retain the current measure for the future.” Estimates of the official number and percent of people in poverty are published every year by the Census Bureau, with the most recent estimates available in Poverty in the United States: 1998. As of September 1999, the official poverty measure used in the 1998 report was under review by an interagency committee chaired by the Office of Management and the Budget. These figures have been, and continue to be, easily accessible.

Using measures based on the work of a National Academy of Sciences (NAS) panel, which published a report in 1995 that included a series of recommendations concerning improving the official poverty measure, experimental income (poverty) thresholds using 1997 as a base year are: (Table 1.0 -- Source: Consumer Expenditure Survey, 1998.)\*

[Please see comment document image file to view table.]

According to the U.S. Census Bureau Population Survey of March 1999, the official measure of the number of poor and poverty populations in 1998, using experimental measures, was 34,476,000 people, or 12.7% of the U.S. population. Based on this information, it is obvious that low-income and poverty figures used by DOE in the Yucca Mountain Draft EIS do not accurately reflect differences in poverty across population groups and across time. A re-assessment of low-income and poverty levels in Nevada is necessary and added to this re-assessment should be figures related to communities along all transportation routes proposed in the Draft EIS.

In addition, DOE inaccurately uses the terms “low-income” and “poverty level” interchangeably. “Low income” is defined by the U.S. Department of Housing and Urban Development as 80 percent of the median family income for the area, subject to adjustments for areas with unusually high or low incomes or housing costs. “Very low-income” is defined as 50 percent of the median family income for the area, with the same adjustments. FY1999 income

limits are easily accessible on the World Wide Web at [www.huduser.org/data/factors.html](http://www.huduser.org/data/factors.html). Poverty level income in the U.S. is shown in Table 1.0 (above).

While DOE's use of 1990 outdated population and income-level statistics might be somewhat understandable, based on the time frame in which the Draft EIS was completed, it is not understandable or acceptable to disregard standard and accepted statistical projection tools in estimating health and environmental justice impacts. Data used by DOE will be a minimum of two decades old, if and when the proposed repository begins operation in 2010. The point is not whether an environmental justice "case" can be proved, but rather that DOE's analysis is incomplete, insufficient, and inadequate for decision making purposes. The entire Environmental Justice approach should be re-calibrated, based on a newly designed environmental and public health and safety analysis and using 1999 income and population estimates as a base for more accurate extrapolations to the date of proposed repository start-up.

The concept of environmental justice promotes the fair treatment of people of all races, incomes, and cultures with respect to the development, implementation, and enforcement of environmental laws and policies. Fair treatment implies that no person or group of people shall shoulder a disproportionate share of the negative environmental impacts resulting from domestic and foreign policy programs. Nevada has been unfairly targeted to shoulder a disproportionate share of the negative impacts of America's nuclear legacy and the full burden of the U.S. nuclear power industry's inability to understand or deal with its own waste problems. This is an environmental justice issue, clear and simple.

\*The U.S. Census Bureau's "Poverty Thresholds 1998" used an even higher number for the reference family of two adults and two children. As of September 30, 1999, the 1998 figure used by the Bureau was \$16,530. In addition, the Census Bureau acknowledged that, in 1998, "the application of the NAS recommendations instead of the official measure implies that an additional 5.1 million people are living in poverty in the U.S."

#### **Response**

The approach to environmental justices in the Draft EIS and Final EIS is consistent with DOE's own guidance, as well as that of the Council on Environmental Quality. The goal of this approach is to identify whether any high and adverse impacts would fall disproportionately on minority and low-income populations. The approach first analyzes the potential impacts on the general population as a basis for comparison. Second, based on available information, the approach assesses whether there are unique exposure pathways, sensitivities, or cultural practices that would result in high and adverse impacts on minority and low-income populations. If such potential impacts would be high and adverse, the approach then compares the impacts on minority and low-income populations to those on the general population to determine whether any high and adverse impacts fall disproportionately on minority and low-income populations. In other words, if high and adverse impacts on minority or low-income population would not appreciably exceed the same type of impacts on the general population, no disproportionately high and adverse impacts would be expected.

In response to comments received on the Draft EIS, DOE considered locations at which individuals could reside nearer to the rail corridors and heavy-haul truck routes in Nevada as a way of representing conditions that could exist anywhere in potentially affected communities. For purposes of analysis, DOE assumed that a maximally exposed individual could reside or work as close as 4.9 meters (16 feet) to a heavy-haul truck route and 30 meters (98 feet) to a rail corridor. During the 24-year period of repository operations, if each shipment of spent nuclear fuel and high-level radioactive waste passed by these maximally exposed individuals, they would receive an estimated dose ranging from about 2 millirem (increased fatal cancer probability of 1 in 1 million) for rail shipment to about 29 millirem (increased fatal cancer probability of 2 in 100,000) for heavy-haul shipments.

These exposures would be well below those received from natural background radiation, would not be discernible even if corresponding doses could be measured, and would not add measurably to other impacts that an individual could incur. For comparison, the lifetime likelihood of an individual incurring a fatal cancer from all other causes is about 1 in 4.

With regard to the health impacts analysis, there is an extensive body of knowledge about the physiological effects of fission products and other radionuclides generated in spent nuclear fuel during reactor operations. DOE applied that knowledge to estimate health effects for a proposed repository at the Yucca Mountain site. Estimates of the risk of latent cancer fatality from exposure to ionizing radiation have been established by national and international

advisory organizations such as the National Council on Radiation Protection and Measurements and the International Commission on Radiological Protection. DOE used these factors to estimate potential health impacts, and determined that the most likely outcome from potential exposure to ionizing radiation from the Yucca Mountain repository during operations and the 10,000 year postclosure period would be no latent cancer fatalities in the surrounding population.

DOE acknowledges that the scope of the EIS is highly complex and has many unique features since DOE analyzed a variety of alternatives and scenarios that would implement a Proposed Action to construct, operate and monitor, and eventually close a repository at Yucca Mountain. In recognition of this complexity, DOE organized the EIS to present information, methods of analysis, and results of analysis as clearly and concisely as possible.

DOE received numerous reports from affected units of local government providing socioeconomic baseline environmental information. The reports contain information that characterizes the existing community environment, provides assessments of economic development, or includes basic economic and demographic trends. DOE reviewed these reports and determined that the information provided was consistent with the information used in the EIS. At the time the Draft EIS was published, the Nevada population estimates used by DOE were based on the most recently available information (1996-1997) from the U.S. Census Bureau. These data were used in DOE's economic and demographic forecasting model to project population growth and to evaluate socioeconomic impacts. In response to comments, DOE updated its population estimates in the regions of influence to reflect the most recent State and local information and compared these locally derived estimates to the U.S. Census Bureau 2000 summary data for Nevada.

DOE identified minority and low-income populations by analyzing the Bureau of Census "block groups." For environmental justice purposes, block groups were pinpointed where the percentage of minority or low-income residents was meaningfully greater than average. Low-income populations were defined using the annual statistical poverty thresholds from the Bureau of the Census. DOE followed the Council on Environmental Quality guidance for how to define low-income populations. This guidance states that "Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty" (DIRS 103162-CEQ 1997). DOE based the EIS analysis on this definition and used the 1990 thresholds as explained above.

#### **7.5.11 (6309)**

##### **Comment** - EIS001727 / 0015

There is a very poor job done with dealing with the impacts on Indian tribes and Native American lands and cultural resources, another major issue not only in Nevada, but throughout the trans-Mississippi west.

##### **Response**

DOE initiated the Native American Interaction Program in 1987 to consult and interact with tribes and organizations on the characterization of the Yucca Mountain site and the possible construction and operation of a repository. DOE has also been working closely with the Consolidated Group of Tribes and Organizations, which consists of officially appointed tribal representatives who are responsible for presenting their respective tribal concerns and perspectives to the Department. DOE also supported the preparation of *American Indian Perspectives on the Yucca Mountain Site Characterization Project and the Repository Environmental Impact Statement* (DIRS 102043-AIWS 1998), which DOE used as a reference in writing the EIS. Section 4.1.5.2 of the EIS addresses the Native American viewpoint with regard to how the proposed project would affect cultural resources in the Yucca Mountain area. Section 4.1.13.4 of the EIS discusses the Native American perspective regarding the repository and the surrounding region.

DOE does not believe it necessary to consider population characteristics on a community-by-community basis to determine potential public health and safety impacts from the transportation of spent nuclear fuel and high-level radioactive waste. The use of widely accepted analytic tools, latest reasonably available information, and cautious but reasonable assumptions if there are uncertainties, offer the most appropriate means to arrive at conservative estimates of transportation-related public health impacts.

In response to public comments, DOE has included maps of highway routes and rail lines it used for analysis in the EIS. It also included potential health and safety impacts associated with shipments for each state through which shipments could pass.

For purposes of analysis, DOE assumed that a maximally exposed individual could reside or work as close as 4.9 meters (16 feet) to a heavy-haul truck route and 30 meters (98 feet) to a rail corridor. During the 24-year period of repository operations, if each shipment of spent nuclear fuel and high-level radioactive waste passed by these maximally exposed individuals, they would receive an estimated dose ranging from about 2 millirem (increased fatal cancer probability of 1 in 1 million) for rail shipments to about 29 millirem (increased fatal cancer probability of 2 in 100,000) for heavy-haul truck shipments. These exposures would be well below those received from natural background radiation, would not be discernible even if corresponding doses could be measured, and would not add measurably to other impacts that an individual could incur. For comparison, the lifetime likelihood for an individual incurring a fatal cancer from all other causes is about 1 in 4.

#### **7.5.11 (6603)**

##### **Comment** - EIS001878 / 0008

Environmental justice. The DEIS inadequately analyzes the project impacts in relation to environmental justice in Nevada as well as nationally. It relies on outdated census data for Nevada, and concludes that impacts to minority and low income persons will not be disproportionately adverse. Eureka County disagrees, since persons who reside in rural areas are often of lower income. Because of the nature of rural life, communities are dispersed, rather than concentrated. Given the limited political power of rural communities, they are often targeted for unwanted projects--projects that are dangerous, hazardous, and that no other area would tolerate.

The Yucca Mountain repository is an excellent example of this type of "justice." The DOE's risk models are based on avoiding urban areas, and presume that risks from the project should be borne by rural people.

Eureka County understands the President's Executive Order (February 16, 1994) to mean that the DOE should consider the effects of past programs and policies on communities, as well as the additional impacts of the Yucca Mountain project. Especially regarding public health impacts from exposure to radiation, the DOE must go beyond the minimal analysis in the DEIS. Rural low income populations received damaging doses of radiation in the 1950s and 1960s from above-ground and underground nuclear weapons tests conducted by the DOE's predecessor, the Atomic Energy Commission. The DOE must take these disproportionately high adverse health and environmental impacts of its programs, policies, and activities into consideration.

##### **Response**

DOE implements its responsibilities in relation to environmental justice through its "Environmental Justice Strategy [of] Executive Order 12898," (April 1995). This strategy lists four goals: (1) identify and address DOE programs, policies, and activities that might have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations; (2) enhance the credibility and public trust of DOE by making public participation a fundamental component of all program operations, planning activities, and decisionmaking; (3) improve research and data collection methods related to human health and the environment of minority and low-income populations by incorporating full characterizations of risks, including the identification of differential patterns of subsistence consumption of natural resources among such populations; and (4) further Departmental leadership by integrating environmental justice criteria, as appropriate, with activities and processes related to human health and the environment. The DOE environmental justice methodology brings together results of analyses from technical disciplines that focus on consequences to certain resources that could affect human health or the environment to determine disproportionately high and adverse effects on minority and low-income populations.

The Supplement to the Draft EIS and Final EIS uses Nevada population data that are consistent across technical areas and that directly reflect data developed by and received from county and state officials. In response to comments, DOE has updated its population estimates in the regions of influence to reflect the most recent state and local information, as well as the Bureau of the Census 2000 population summary data for Nevada. For the repository and transportation-related regions of influence, DOE performed Regional Economic Models, Inc. (REMI) simulations to establish an updated population baseline by accounting for population estimates and projections provided by county governments. In the absence of county information, DOE used population estimates and projections from the Nevada State Demographer's Office. The updated population baselines were then used to

estimate populations for Clark, Nye, and Lincoln Counties and the Rest of Nevada through 2035. These population projections were compared and adjusted to the 2000 Census population summary data. In this way, model population projections were reflected the best available information.

To update the health and safety analyses associated with transportation in Nevada, DOE used the baseline population for each county in the region of influence and forecast to 2035 to scale impacts from results based on the 1990 Census. For example, if a county's population was estimated to double from 1990 to 2035, DOE assumed that the population along the associated rail corridor also would double and scaled radiological impacts accordingly.

For other Nevada counties other than Nye, Clark, and Lincoln, DOE used Nevada State Demographer projections (DIRS 155350-State of Nevada 1999) as the basis for the population projections it used in analyses of accidents near transportation corridors and for health effects modeling. The Department obtained estimates of historic populations of towns and cities in Nevada from the State Demographer's Office or from county documents, as appropriate.

Table 6-4 of the EIS lists DOE estimates for radiological impacts to the public in Nevada of incident-free transportation and transportation accidents for shipments of spent nuclear fuel and high-level radioactive waste to Yucca Mountain. Table 8-58 lists cumulative radiological and nonradiological impacts of transporting radioactive materials in the United States from 1943 to 2047. Section 3.1.8.2 discusses the estimated annual radiation dose to a hypothetical individual in Springdale, Nevada, from airborne radioactive materials from past nuclear weapons tests at the Nevada Test Site. In addition, Section 3.1.8.2 states, DOE has made quantitative estimates of offsite doses from releases from past weapons testing activities at the Nevada Test Site (DIRS 146592-Black and Townsend 1998). In response to public comments, Appendix J of the EIS now contains maps showing routes used to analyze impacts and presents estimated radiological and nonradiological impacts for each state. This is in addition to the route maps that were already included in the Draft EIS (see Section 2.1.3.2 for national routes and Section 2.1.3.3 for Nevada maps).

Based on the information in the EIS, DOE has concluded that the cumulative impacts of proposed future transportation activities, past nuclear weapons testing, and other Federal and private programs involving transportation of radioactive materials in Nevada would be small.

#### **7.5.11 (6809)**

##### **Comment** - EIS001905 / 0014

Environmental justice concerns are grossly ignored.

The official administration policy of environmental justice is to eliminate any form of racial and economic injustice in its environmental policies. The DOE states in the DEIS that it believes there would be no disproportionately high and adverse impacts to minority or low-income populations as a result of the Proposed Action, including national transportation. Analyses along specific transportation routes were not carried out; therefore, there is no data to support the DOE's finding. The DEIS also lacks a response to the differing perspectives of Native Americans in Nevada. The generic nature of the national transportation analysis and the lack of response to Native Americans in Nevada suggests that the Draft EIS finding regarding environmental justice is without basis.

##### **Response**

At this time, many years before shipments could begin, it is impossible to predict accurately which highway routes or rail lines DOE could use. Therefore, for the analysis in this EIS, DOE selected potential highway routes in accordance with U. S. Department of Transportation regulations, which require the use of preferred routes. The selection of potential rail routes was based on current practices, because there are no comparable Federal regulations applicable to the selection of rail lines for the shipment of radioactive materials.

DOE does not believe it necessary to consider population characteristics on a community-by-community basis to determine the potential public health and safety impacts from the transportation of spent nuclear fuel and high-level radioactive waste. The use of widely accepted analytic tools, best available information, and cautious but reasonable assumptions if there are uncertainties, offer the most appropriate means to arrive at conservative estimates of transportation-related public health impacts.

DOE assessed the general potential for disproportionately high and adverse environmental impacts to occur to minority or low-income populations from national transportation. To make this assessment, DOE compared the total annual kilometers traveled to ship spent nuclear fuel and high-level radioactive waste to Yucca Mountain to the annual kilometers of national commercial highway, rail, and barge transportation shipments of all commodities (see Section 6.2 of the EIS). This analysis showed that shipments by legal-weight truck, railcar, or barge to Yucca Mountain would comprise less than 0.01 percent of the national transportation of all commodities by these other modes.

In response to comments received on the Draft EIS, DOE considered locations at which individuals could reside nearer to the rail corridors and heavy-haul truck routes in Nevada as a way of representing conditions that could exist anywhere in potentially affected communities. For purposes of analysis, DOE assumed that a maximally exposed individual could reside or work as close as 4.9 meters (16 feet) to a heavy-haul truck route and 30 meters (98 feet) to a rail corridor. During the 24-year period of repository operations, if every shipment of spent nuclear fuel and high-level radioactive waste passed by these maximally exposed individuals, they would receive an estimated dose ranging from about 2 millirem (increased fatal cancer probability of 1 in 1 million) for rail shipment to about 29 millirem (increased fatal cancer probability of 2 in 100,000) for heavy-haul shipments.

These exposures would be well below those received from natural background radiation, would not be discernible even if corresponding doses could be measured, and would not add measurably to other impacts that an individual could incur. For comparison, the lifetime likelihood of an individual incurring a fatal cancer from all other causes is about 1 in 4.

DOE believes that it appropriately considered Native American viewpoints by incorporating into the EIS potential impacts to historic and other cultural resources identified by Native Americans as important to sustaining and preserving their cultures. DOE initiated its Native American Interaction Program in 1987 to consult and interact with tribes and organizations on the characterization of the Yucca Mountain site and the possible construction and operation of a repository. DOE has also been working closely with the Consolidated Group of Tribes and Organizations, which consists of officially appointed tribal representatives who are responsible for presenting their respective tribal concerns and perspectives to the Department. DOE also supported the preparation of *American Indian Perspectives on the Yucca Mountain Site Characterization Project and the Repository Environmental Impact Statement* (DIRS 102043-AIWS 1998), which was used as a reference in writing the EIS. This document presents a Native American point of view with regard to the siting of a repository at Yucca Mountain. DOE recognizes the Native American opposition to the siting of a repository at Yucca Mountain. DOE has modified corresponding language in Section 4.1.13 of the EIS.

#### **7.5.11 (6919)**

**Comment** - EIS001522 / 0017

Native Americans, especially the Shoshone and the Paiutes, would be treated unjustly, if the Yucca Mountain project continued, both because of factual reasons and because of the ethically invalid way that the DOE has defined “environmental injustice.” Consider first the invalid definition. The DOE asserts that

“The environmental justice analysis brings together the results of analyses from different technical disciplines that focus on consequences to certain resources, such as air, land use, socioeconomic, air quality, noise, and cultural resources, that, in turn, could affect human health or the environment. If any of these analyses were to predict high and adverse impacts to the human population in general, then an environmental justice analysis would determine if those impacts could occur in a disproportionately high and adverse manner to minority or low-income populations” (DEIS, 1999, 4-81; see also, for example, 8-58).

DOE makes this same move throughout the DEIS. It argues that a particular impact will be low, based on the DOE’s theoretical models and opinions, then says because the general impact is low, therefore the impact on Native Americans will be low (see, for example, DEIS, 1999, 5-49). Or it says that, “because there would be no large cumulative impacts ... there would be no disproportionately high and adverse impacts to minority and low-income populations” (DEIS, 1999, 8-91). This account of environmental injustice essentially claims that, if the DOE admits that any impacts on the general population are large, then (and only then) it will examine the impact on minorities and low-income groups. This strategy is both logically and ethically flawed, however, as well as scientifically flawed. It is logically flawed because it commits the fallacy of composition, a fallacy that consists of assuming that,

if there are impacts of a certain type on a subset (part of a group) of people, therefore there are impacts on the whole set (the whole of a group) of people. Obviously, as any student of logic knows, such reasoning is false. There could be a massive impact on Native Americans, for example, as a result of Yucca Mountain, without there being any obvious and massive effect on the population as a whole. Hence, if one waited for a whole-population impact, as DOE proposes, then DOE is likely to miss many adverse environmental-justice impacts, precisely because of the narrow way that DOE has defined “environmental justice” and then reasoned about it, in ways that use the fallacy of composition.

This fallacy of composition is also ethically flawed because, unless the DOE admits that certain impacts are large, it will investigate no environmental-justice issues at all. There is an ethical problem with this strategy because the magnitude of an impact is separate from the equity of its distribution. The first consideration is one of utilitarian ethics, whereas the latter consideration is one of egalitarian ethics (Shrader-Frechette, 1993, 90-94). By considering only the former, the DOE adopts a utilitarian ethics that fails to take account of equity (Shrader-Frechette 1993). Such a strategy is also ethically flawed because it relies on the DOE to define an impact as large before taking account of it ethically. In the case of an inequity, the potential perpetrators ought not be able to define what is and is not inequitable, while the alleged victims have no voice in what constitutes an important impact.

From a factual and scientific point of view, DOE’s questionable account of environmental justice is troubling because the DOE admits that, with respect to transportation, native Americans theoretically will bear much of the risk of the waste transport because “portions of some routes would cross or be adjacent to Native American tribal lands.” (DEIS, 1999, 6-137). Given this admission, only the allegedly low radiation exposures claimed by the DOE would prevent Native Americans from bearing a disproportionate impact from Yucca Mountain.

Not only does the DOE assume that a large general-population impact is a necessary condition for a disproportionate impact on Native Americans, but the DOE also commits the fallacy of the appeal to ignorance in its assessment of environmental justice and transport accidents relevant to Yucca Mountain. It notes, repeatedly, in Chapter 6 of the DEIS, that it has not yet chosen the transport routes to be taken, the transport modes (rail or truck) to be used, and the transport casks to be employed. It also admits that “portions of some routes [of waste casks] would cross or be adjacent to Native American tribal lands” (DEIS, 1999, 6-137). Despite all these unknowns, the DOE claims that “DOE has identified no subsection of the population that would be disproportionately affected by transportation related to the Proposed Action” (DEIS, 1999, 6-34). Of course not. If the routes are not yet chosen, then one cannot tell the degree to which they would cross tribal land or the degree to which poor people and minorities would be living near the routes chosen. Hence, because of the unknowns in the DEIS, it would be impossible to determine a Native-American transport impact. Essentially, the DOE has argued that it does not know the transport routes, modes, and casks, and therefore “DOE has concluded that no disproportionately high and adverse impact would be likely on minority or low-income populations from the national transportation of spent nuclear fuel and high-level radioactive waste to Yucca Mountain” (DEIS, 1999, 6-34,35). This is a classic instance of the logical fallacy of the appeal to ignorance: person A is ignorant of any X, therefore there are no X. From one’s ignorance about something, one cannot logically draw any conclusions about it. To do so is to reason invalidly, and this is precisely what the DEIS has done.

Additional inequities associated with the proposed Yucca Mountain repository also present problems of environmental justice. The repository proposes to add to the environmental and social burdens that this society already has imposed on Native Americans and on Nevadans and hence raises a number of issues of compensatory justice or reparation. Yet instead of reparation or compensation to Nevadans and to Native Americans, the DOE purposes to add to their burdens in a variety of ways. Native Americans claim land rights, under U.S. treaty, to the Yucca Mountain lands (DEIS, 1999, 3-9). Although they claim legal power to interpret treaties with Native Americans, the U.S. courts have no ethical power over lands that the U.S. took from Native Americans by force. As a consequence, the U.S. government has no ethical right to impose Yucca Mountain on Native Americans who do not want it. Moreover, Yucca Mountain is part of the holy lands of the Paiute and Shoshone, and they do not want the repository on their holy lands (AIWS, 1998; DEIS, 1999, 3-70, 4-84). The DOE never addresses this argument of the Native Americans in the DEIS. Instead, the DOE merely begs the question of the acceptability of the Yucca Mountain site.

The Yucca Mountain Project also threatens environmental justice because the DOE has denied access and use to these important traditional lands of Native Americans, and this denial threatens their cultural survival in a unique



and irreversible way, a way experienced by no other Native Americans (AIWS, 1998; DEIS, 1999, 4-84, 85). Moreover, in taking away Native-American use of these holy lands, the DOE has given no rationale for why it believes that it need not take account of the National Historical Preservation Act, the American Indian Religious Freedom Act, Executive Order 13007 on "Indian Sacred Sites," and Executive Order 12898 on "Environmental Justice," all of which could be used to argue against building Yucca Mountain (DEIS, 1999, 11-12, 13, 14).

Although the U.S. DOE invited the participation of the impacted Shoshone and Paiutes in the Yucca Mountain discussions, there is no evidence whatsoever in the DEIS that the U.S. DOE considered the arguments of these peoples, and the U.S. DOE has given no arguments that show why it believes that its ethical claims are superior to those of the Native Americans. In the DEIS, the DOE merely repeated the claims of the Native Americans (see, for example, DEIS, 1999, 4-84 and 85), but never addressed why it believed these arguments were not compelling. At a minimum, if the DOE is to reject the environmental-justice claims of Native Americans, the DOE is obliged to explain both (a) what it thinks its rationale is and to detail (b) what considerations of the Shoshone and Paiute would be compelling grounds for abandoning the Yucca Mountain facility. The US DOE has done neither.

Additional environmental-justice issues arise because the Yucca Mountain facility is next to the Nevada Test Site. As a result, Native Americans have already borne more than their fair share of negative environmental impacts from Nevada and from the U.S. because the tribes live directly downwind from the Nevada Test Site and have experienced increased radiation-related cancers and ailments as a result of U.S. weapons testing (Shrader-Frechette, 1994). The DEIS (1999, 8-76) does consider the radiological impact of weapons testing and, indeed, even makes the assumption that the migration of radionuclides from testing will be through the same pathways as migration from the proposed repository. Nevertheless, the DEIS never considers this particular environmental-justice aspect of the repository, namely that the same people are likely to bear the worst effects of testing and the worst effects of Yucca Mountain. Because both Nevadans and Native Americans would receive the most negative impacts from Yucca Mountain, if it were built, these minorities are receiving a disproportionate environmental impact from the site, as compared to other Americans. Moreover, they receive these negative impacts not only because of the radiological hazards that they face but also because of the nuclear-related liability they face. Under existing U.S. law, it is not possible for a citizen to sue (the person or group that causes nuclear-related injuries or deaths) for more than approximately one percent of the costs of all nuclear-related consequences of some accidents. Because of the nuclear-exclusion clause in U.S. law, those living near the proposed Yucca Mountain waste facility would face a massive financial risk, even if there is no accident. Knowing that one would not be fully covered, in the event of catastrophe, is both a financial, as well as a psychological and medical risk, apart from whether any severe accidents even take place (see Shrader-Frechette, 1993, especially pp. 96-99). Yet the DEIS does not even consider this nuclear-liability exclusion, as part of its discussion of environmental justice.

DOE's problems with environmental-justice concerns show that it has great difficulty dealing with ethics, and especially, with equity issues. Not only does it repeatedly employ utilitarian ethical assumptions in its analyses, but it fails to consider the actual arguments of the Native American groups at all. Moreover, it admits that some of the repository impacts could have higher, skewed impacts for a few people. Yet it never analyzes the logical consequences of its remarks about skewing, such that it considers the environmental-justice ramifications of the skewing. DOE claims, for example:

"The performance results reported in this EIS are highly skewed. In this context, skewed indicates that there are a few impact estimates that are much larger than the rest of the impacts. When a large value is added to a group of small values, it dominates the calculation of the mean. The simulations reported in this EIS have mean impacts that are often above the 90th percentile and occasionally above the 95th (DEIS, 1999, 8-63).

If DOE admits that the performance results are highly skewed, then it ought to consider these large impacts as potential problems of environmental justice. Yet it never does so. Nor does it provide alternatives to the misleading mean figures that it employs in its analyses. Hence the skewed data reveal not only scientific problems with the DEIS but also ethical difficulties.

### **Response**

As required by Executive Order 12898, DOE performs environmental justice analyses to identify and address, as appropriate, the potential for its actions to cause disproportionately high and adverse impacts to minority or low-income populations. The goal of this approach is to identify whether any high and adverse impacts would fall

disproportionately on minority and low-income populations. The approach first analyzes the potential impacts on the general population as a basis for comparison. Second, based on available information, the approach assesses whether there are unique exposure pathways, sensitivities, or cultural practices that would result in high and adverse impacts on minority or low-income populations. If such potential impacts would be high and adverse, the approach then compares the impacts on minority and low-income populations to those on the general population to determine whether any high and adverse impacts fall disproportionately on minority and low-income populations.

For example, DOE evaluated the impact to people who could live along a transportation route. DOE assumed that maximally exposed individual could reside as close as 4.9 meters (16 feet) to a heavy-haul truck route. During the 24-year period of repository operations maximally exposed individual would receive an estimated dose of about 29 millirem, resulting in an increased fatal cancer probability of 2 in 100,000. These exposures would be well below those received from natural background radiation, would not be discernible even if corresponding doses could be measured, and would not add measurably to other impacts that an individual could incur. For comparison, the lifetime likelihood of an individual incurring a fatal cancer from all other causes is about 1 in 4. These results demonstrate there would virtually be no health and safety impact to any person residing along a transportation route.

Although DOE has not yet determined the specific routes it would use to ship spent nuclear fuel and high-level radioactive waste to the proposed repository, the EIS analysis used current regulations governing highway and rail routes to estimate potential environmental impacts of national transportation. The Department of Transportation regulations require highway carriers to use interstate highways, interstate bypasses, beltways, or state-designated preferred routes for highway shipments. The actual routing for shipments of spent nuclear fuel and high-level radioactive waste to the proposed repository would comply with the applicable Department of Transportation and Nuclear Regulatory Commission regulations in effect at the time the shipments occurred.

If DOE made a decision about transportation of spent nuclear fuel and high-level radioactive waste in Nevada, additional engineering and environmental studies would be initiated for the selected mode and route or corridor to provide the basis for detailed design.

In response to comments, DOE has updated and refined information germane to its environmental justice analysis. For example, the EIS now includes more detailed mapping of minority populations, and additional mapping and information that describes the proximity of tribal lands and cultural and ceremonial areas to rail corridors in Nevada. Based on the additional information and resulting analysis, DOE has concluded that disproportionately high and adverse impacts from the construction and operation of a branch rail line or intermodal facility would be unlikely. DOE has also estimated the potential health impacts from a subsistence diet based primarily on game taken from lands near the repository exclusion areas and concluded that high and adverse health and safety impacts would be unlikely.

DOE understands that the Yucca Mountain site is within the historic ancestral territory of the Western Shoshone and the Southern Paiute and that the Western Shoshone people maintain that the Ruby Valley Treaty of 1863 gives them rights to certain lands; including the Yucca Mountain region. A 1985 U. S. Supreme Court decision held that payment for the land has been made and that payment constitutes a final settlement. Although DOE recognizes the sensitivity of this issue, it believes that the Supreme Court case settles these issues [United States v. Dann, 470 U.S. 39 (1985)]. DOE is aware that among the Native American community there is significant disagreement with the Court rulings.

DOE believes that it appropriately considered Native American viewpoints by relying on the results of its long-term and ongoing interactions with Native American tribal representatives regarding Yucca Mountain, and by identifying potential impacts to historic and other cultural resources important to sustaining and preserving their cultures. During preparation of the EIS, DOE interacted with Native American tribes on a range of topics of interest to assess their viewpoints and perspectives. DOE supported the American Indian Writers Subgroup of the Consolidated Group of Tribes and Organizations in its preparation of *American Indian Perspectives on the Yucca Mountain Site Characterization Project and the Repository Environmental Impact Statement* (DIRS 102043-AIWS 1998), which was used as a reference in preparing the EIS. DOE acknowledges in the EIS that people from many Native American tribes have used the area proposed for the repository as well as nearby lands; that the lands around the site contain cultural, animal, and plant resources important to those tribes; and that the implementation of the Proposed

Action would continue restrictions on access to the repository site environs as discussed in Section 4.1.13.4 of the EIS.

In light of the comments received on the Draft EIS concerning perception-based and stigma-related impacts, DOE examined relevant studies and literature on perceived risk and stigmatization of communities to determine whether the state of the science in predicting future behavior based on perceptions had advanced sufficiently since scoping to allow DOE to quantify the impact of public risk perception on economic development or property values in potentially affected communities. DOE also reevaluated the conclusions of previous literature reviews, such as those prepared by the Nuclear Waste Technical Review Board and the State of Nevada, among others. DOE has concluded that while in some instances risk perceptions could result in adverse impacts on portions of a local economy, there are no reliable methods whereby such impacts could be predicted with any degree of certainty. Any such stigmatization would likely be an aftereffect of unpredictable future events, such as a serious accident, which might not occur. As a consequence, DOE addressed but did not attempt to quantify any potential for impacts from risk perceptions or stigma in the Final EIS. (Refer to Section 2.5.4 and Appendix N of the Final EIS for additional information.) DOE would continue to work with Native American tribes to understand, and mitigate as appropriate, actual impacts that could result from implementing the Proposed Action, if the site was recommended and approved.

In the sense used in the EIS, *skewness* is a mathematical property of a nonsymmetrical distribution of values around the median. The dose distributions presented in the EIS represent a dose to an individual or to a group of individuals taken as a whole (that is, a population) from differing combinations of disposal system and environmental parameter values and are not dose distributions over differing members of a population. Therefore, the nonsymmetrical dose distribution for either the maximally exposed individual or the population does not indicate environmental justice problems, science, or ethics. The mean dose is the most appropriate dose to use for environmental impact analysis. The higher doses (that is, the 95th percentile) are useful for providing perspective on uncertainty associated with the mean dose, but are not appropriate for basic environmental impact analysis.

#### **7.5.11 (7228)**

**Comment** - EIS001337 / 0106

Page 4-82 2nd bullet. What is the definition of unacceptable. Who will decide?

Unacceptable to whom?

#### **Response**

Consistent with the National Environmental Policy Act, the lead agency responsible for the Proposed Action (in this case DOE) decides what is acceptable in terms of proceeding with a Proposed Action in view of the potential impacts its evaluation has identified. In turn, the NWPA gives the President, the State of Nevada, Congress, and the Nuclear Regulatory Commission opportunities to participate in the decision process relative to the overall suitability of the site; those decisions would be made after considering information in the EIS.

#### **7.5.11 (7243)**

**Comment** - EIS001862 / 0010

DOE is required by Executive Order 12898 to address environmental justice issues in its “programs, policies, and activities.” The bishop Indian Tribal Council strongly opposes the methodology utilized for determining whether minority communities would be disproportionately impacted by a geologic repository at Yucca mountain, as set forth in the Draft EIS at 3.1.13.1. The Draft EIS methodology adds all minority populations together, and then compares the percentage of minorities in the specific area with the percentage in the state. Tribal communities in the area are all relatively small (generally as a result of historic contact with non-indigenous people), as are most Tribal communities in the United States. The significance of these communities is not measured by the methodology in the Draft EIS, which makes it nearly impossible for a tribal community in the region to qualify as a minority community. Tribal communities are never a large enough percentage of the overall population to register as a minority community.

To determine whether or not there is disproportionate impact in this region requires a methodology, which takes into account the locations of the concentrations of tribal members. The methodology should compare the percentage of tribal members in the specific area impacted against the percentage of tribal members in the larger region (such as

the state, or even the country). The methodology utilized also fails to consider that each tribal community is inherently unique, with its own traditions and culture, making its protection significant.

In addition, the environmental justice analysis must take into account that tribal communities are adversely impacted by actions in the region in a manner disproportionate to their numbers. Tribal members have always lived on this land. No other minority community will have holy land affected by the geologic repository. No other minority community will be denied access to important religious and cultural sites. The methodology utilized to examine the environmental justice issue completely ignores this reality. Tribal members will use large areas of land for traditional purposes, both ceremonial and subsistence. The impact of any action in the region on the earth, water, and air is also an impact on tribal communities. It cannot be qualified by how many tribal members live within a designated square.

The Bishop Indian tribal Council is sovereign tribal government, who supports the Western Shoshone in their treaty-based claim to the Yucca Mountain region. The Draft EIS address this claim at 3.1.1.4. The Western Shoshone people have not settled their claim with the United States, and the Bishop Indian Tribal Council supports their right to reject monetary compensation for land, a concept, which is offensive to us. The United States cannot place the geologic repository on land, which is by right treaty Indian Country, without the permission of the sovereign tribal government.

### **Response**

As required by Executive Order 12898, DOE performs environmental justice analyses to identify and address, as appropriate, the potential for its actions to cause disproportionately high and adverse impacts to minority or low-income populations. The approach to environmental justices in the Draft EIS and Final EIS is consistent with DOE's own guidance, as well as that of the Council on Environmental Quality. The goal of this approach is to identify whether any high and adverse impacts would fall disproportionately on minority and low-income populations. The approach first analyzes the potential impacts on the general population as a basis for comparison. Second, based on available information, the approach assesses whether there are unique exposure pathways, sensitivities, or cultural practices that would result in high and adverse impacts on minority and low-income populations. If such potential impacts would be high and adverse, the approach then compares the impacts on minority and low-income populations to those on the general population to determine whether any high and adverse impacts fall disproportionately on minority and low-income populations. In other words, if high and adverse impacts on minority or low-income population would not appreciably exceed the same type of impacts on the general population, no disproportionately high and adverse impacts would be expected.

To identify minority and low-income communities in the Yucca Mountain region of influence, DOE pinpointed block groups where the percentage of minority or low-income residents is meaningfully greater than average. For environmental justice purposes, the pinpointed block groups are minority and low-income communities. As defined by the Nuclear Regulatory Commission, a minority population is present in a community when the percentage of minority persons in the area exceeds the percentage of minority persons in the state or region affected by a project by 10 percent or more (that is, 31 percent or more minority persons in a community). Figure 3-23 of the EIS shows block groups in which 31 percent or more of the population consists of minority persons. In this EIS, low-income communities are those in which the percentage of persons in poverty equals or exceeds 20 percent as reported by the Bureau of Census. Figure 3-24 shows low-income communities in an 80-kilometer (50-mile) radius circle around Yucca Mountain (DIRS 103426-NRC 1995).

DOE is aware that the Western Shoshone people maintain that the Ruby Valley Treaty of 1863 gives them rights to certain lands, including the Yucca Mountain region. Although DOE recognizes the sensitivity of this issue, it believes that the U.S. Supreme Court case, *United States v. Dann*, 470 U.S. 39 (1985) settles these issues. In *U.S. v. Dann*, the Supreme Court held that payment had been made in accordance with the Indian Claims Commission Act of 1946. This constituted full and final settlement for the land. DOE is aware that among the Native American community there is significant disagreement with the Court rulings.

DOE supported the preparation of a reference document written by Native Americans (DIRS 102043-AIWS 1998). This document presents a Native American point of view on the potential siting of a repository at Yucca Mountain. DOE acknowledges that Native American people living in the Yucca Mountain vicinity have concerns about the protection of traditions and the spiritual integrity of the land that extend to the propriety of the Proposed Action. In

recognition of the unique legal and political relationship that Native American tribal governments have with the Government of the United States, DOE will consult with tribal governments and will work with representatives of the Consolidated Group of Tribes and Organizations to ensure the consideration of tribal rights and concerns before making decisions or implementing programs that could affect tribes; to continue the protection of Native American cultural resources; and to implement any appropriate mitigation measures. DOE has modified the language in Section 4.1.13 of the EIS.

#### **7.5.11 (7512)**

**Comment** - EIS001912 / 0046

Pg. 3-95 The low-income population definition appears to be substantially different than the readily acceptable definition most government [agencies] use. Low income is typically 50 percent of the area's median income. Very few areas in the country would probably qualify as low income under the DOE definition. Please explain this deviation.

#### **Response**

There are different ways to identify low-income populations. The DOE procedures for implementing Executive Order 12898, "Environmental Justice," are to identify minority and low-income communities in the region of influence by analyzing the Bureau of the Census population designation called "block groups." DOE pinpointed block groups where the percentage of minority or low-income residents is meaningfully greater than average. For environmental justice purposes, the pinpointed block groups are minority and low-income communities. Low-income populations are defined using the annual statistical poverty thresholds from the Bureau of the Census. The 1990 census characterized about 10 percent of the people in Nevada as living in poverty (DIRS 103120-Bureau of the Census 1992). In the 1990 census the poverty threshold for a family of four was a 1989 income of \$12,674. The EIS defines low-income communities as those in which the percentage of persons in poverty equals or exceeds 20 percent as reported by the Bureau of the Census.

DOE examined census block group data to determine if the comment's suggested methodology would identify substantially more low-income populations. In Clark, Nye, and Lincoln Counties, the DOE methodology identified 46, 5, and 1 low-income areas, respectively. For comparison, DOE identified block groups with median incomes of less than 50 percent of the State's median income of \$31,011 (1990 Census, the last definitive data for small areas such as block groups). This second methodology identified fewer low-income block groups, 30, 2, and 1, in Clark, Nye, and Lincoln Counties, respectively. Neither methodology identified any low-income block groups in Lander or Eureka Counties.

#### **7.5.11 (7654)**

**Comment** - EIS001928 / 0011

Pg. S-52 – 2nd para. – The last sentence of this paragraph seems very much contradictory. On the one hand DOE "...believes that there would be no disproportionately high and adverse impacts to minority or low-income populations...", then on the other hand acknowledges that Native Tribes in the area consider the proposed repository to be an adverse element in their lives and environment. If the Tribes, by DOE definition, are a minority, and if the Tribes feel the repository will have inverse impacts on them, then, ipso facto, there are adverse impacts to minorities.

#### **Response**

The goal of the DOE environmental justice strategy is to identify whether any high and adverse impacts would fall disproportionately on minority and low-income populations. The approach first analyzes the potential impacts on the general population as a basis for comparison. Second, based on available information, the approach assesses whether there are unique exposure pathways, sensitivities, or cultural practices that would result in high and adverse impacts on minority and low-income populations. If such potential impacts would be high and adverse, the approach then compares the impacts on minority and low-income populations to those on the general population to determine whether any high and adverse impacts fall disproportionately on minority and low-income populations. In other words, if high and adverse impacts on minority or low-income population would not appreciably exceed the same type of impacts on the general population, no disproportionately high and adverse impacts would be expected.

DOE acknowledges in the EIS that people from many Native American tribes have used the area proposed for the repository as well as nearby lands, that implementation of the Proposed Action would continue restrictions on access

to the area around the repository site, and that the presence of a repository would represent an intrusion into what Native American tribes consider an important cultural and spiritual area. The Department has worked closely with the Consolidated Group of Tribes and Organizations, which consists of officially appointed tribal representatives who are responsible for presenting their respective tribal concerns and perspectives to DOE. DOE and the Consolidated Group of Tribes and Organizations recognize that restrictions on public access to the area have been generally beneficial and protective of cultural resources.

#### **7.5.11 (7742)**

**Comment** - EIS001968 / 0007

The DEIS does not adequately address the disproportionately high and adverse impacts to minority or low-income population of the proposed action.

#### **Response**

As required by Executive Order 12898, DOE performs environmental justice analyses to identify and address, as appropriate, the potential for its actions to cause disproportionately high and adverse impacts to minority or low-income populations. The approach to environmental justice in the Draft EIS and Final EIS is consistent with DOE's own guidance, as well as that of the Council on Environmental Quality. The goal of this approach is to identify whether any high and adverse impacts would fall disproportionately on minority and low-income populations. The approach first analyzes the potential impacts on the general population as a basis for comparison. Second, based on available information, the approach assesses whether there are unique exposure pathways, sensitivities, or cultural practices that would result in high and adverse impacts on minority and low-income populations. If such potential impacts would be high and adverse, the approach then compares the impacts on minority and low-income populations to those on the general population to determine whether any high and adverse impacts fall disproportionately on minority and low-income populations. In other words, if high and adverse impacts on minority or low-income population would not appreciably exceed the same type of impacts on the general population, no disproportionately high and adverse impacts would be expected.

#### **7.5.11 (7980)**

**Comment** - EIS001577 / 0002

I was in the middle of a comment on the environmental justice aspects of on site storage versus moving the waste to Yucca Mountain. And I did not find any positive aspect of the no action scenario number one, being attributed to the salvation of possible transportation accidents, unplanned exposures, diminished land values along the transportation routes and the most, unfortunate, ruining of the Yucca Mountain location and surrounding urban areas of Las Vegas, Los Angeles and elsewhere by the placement of the waste at that location. The negative impacts in terms of environmental justice issues are much greater, in fact, if the waste is removed from where it currently is located and shipped through urban, often poor communities, next to railroad tracks and highways and dumped into a whole out back on the Indian reservation as planned at Yucca Mountain.

#### **Response**

DOE fulfills the requirements of Executive Order 12898 by looking first at whether the impacts on minority and low-income populations would be high and adverse, and then whether any potential high and adverse impacts would fall disproportionately on such populations. As discussed below, it is not necessary to examine the composition of the general population residing along existing spent nuclear fuel and high-level radioactive waste transportation corridors before DOE can reasonably conclude that there would be no disproportionately high and adverse impacts to minority and low-income populations from the transportation of radioactive materials.

The EIS analyzed potential public health effects of routine (incident free) transportation of radioactive materials and transportation accidents involving radioactive materials. The EIS estimates the impacts from air emissions from routine transportation to be 1 emissions-related fatality. The EIS also estimates that the 24-year national transportation campaign would cause fewer than about 3 latent cancer fatalities among the general public, and fewer under the preferred, mostly rail, scenario. Although many people would be exposed nationwide over a long campaign, the radiation dose to any exposed individual living along a transportation route would be very low. In this context, DOE does not consider such impacts to be high. Also, DOE does not know of a plausible mechanism under these circumstances whereby low-income or minority populations could incur high and adverse impacts when the general public does not.

**7.5.11 (8132)**

**Comment** - EIS001840 / 0004

You also have not consulted with the native peoples in any one area. You have not consulted with communities of color of disenfranchisement on the transportation routes.

**Response**

DOE conducted a campaign to inform stakeholders of their opportunities to provide comments on the Draft EIS during the 199-day public comment period. DOE held hearings on the Draft EIS at 21 locations in Nevada and around the country at times (August 13, 1999 through February 28, 2000) it believed were most convenient for the general public. It based its selection of hearing locations and facilities on areas the most likely to be affected by the shipment of spent nuclear fuel and high-level radioactive waste after consultation with county representatives, members of Congress, DOE field offices, and other stakeholders. It scheduled five additional hearings to expand opportunities for stakeholders to comment. When the Draft EIS was published, it was provided to 38 reading rooms in 17 states and the District of Columbia.

The Yucca Mountain Project has also maintained a Native American Interaction Program with 16 tribes and one organization since the mid-1980s. Tribal representatives are named by their respective tribes to sit on a DOE-funded, self-organized committee called the Consolidated Group of Tribes and Organizations. This organization meets twice per year and participates in field trips to Yucca Mountain to impart cultural resource protection information and to become more aware of the studies being conducted. While the Consolidated Group of Tribes and Organizations does not support the potential use of Yucca Mountain as a repository, they have agreed to be involved in an honest and participatory process. DOE will continue to support the Consolidated Group of Tribes and Organizations and Native American program while carrying out the mission of characterizing the Yucca Mountain site.

**7.5.11 (8861)**

**Comment** - EIS002085 / 0002

I would like to declare that the Colorado River Indian Tribes have passed unknown nuclear waste-free zones, and we have that in active status right now. And I would like to say that I would like to see Nevada's other tribes do that, too.

**Response**

Thank you for your comment.

**7.5.11 (9341)**

**Comment** - EIS001888 / 0057

In 1998, the population of Clark County was just about 1.2 million, with 13% described as Hispanic, 9% African American, 5% Asian/Pacific Islander, and about 1% Native American. Most of the latter live on one of two reservations located in the county.<sup>(1)</sup> As of July 1999, there were an estimated 35,610 non-English speaking or reading people in Clark County, almost 5% of the population. More than 75% of these, approximately 26,990 people, speak and read only Spanish. Approximately 15% of County households may be classified as low income. The Clark County population also consists of retired persons, generally older than the median county age of 47 years, and who usually live on a fixed income below the median county income of about \$40,000 per year.<sup>(2)</sup>

Clark County's analysis of the laws, regulations, executive orders, agency guidelines and other government documents confirms that there are two underlying concerns regarding environmental justice.<sup>(3)</sup> The first is that the safety of populations most vulnerable to government actions with potential adverse environmental impacts should be given special attention and deserve protection. The second is that the groups most affected by government actions should participate in the decision-making processes. These can more succinctly be referred to as concerns about vulnerable populations and public participation. These two concerns correspond with the working definition of environmental justice used by Clark County for purposes of these comments:

“a social condition in which environmental hazards, particularly those created by human actions, do not disproportionately impact vulnerable individuals and populations, and in which decision-making processes concerning the distribution of these impacts are safeguarded against unjust outcomes by a range of policies and practices.”<sup>(2)</sup>

Clark County's review of DEIS Appendix C reveals that DOE did not meet the requirements of Executive Order 12898 that directs DOE to consult with states, Native American tribes and local governments to identify minority and low-income groups within their jurisdictions. Clear identification of such groups would allow DOE to provide proper notification regarding the EIS meetings, provide translations of materials, and otherwise encourage individuals and organizations that represent these groups to participate fully in the process.

However, no such consultation occurred between DOE and Clark County. This raises the question whether there were any real efforts to get input from Native Americans, low-income, minority, non-English speaking and others who live along the likely transportation routes and who have claims to Yucca Mountain and surrounding land.

The interpretation of environmental justice issues are dependent upon the findings of the DEIS. The DEIS concludes that no harm would occur to these vulnerable populations. Given that a substantial number of minority and low-income populations reside along proposed transportation, DOE does not substantiate this lack of risk in the DEIS. Within this context, we present our comments on the environmental justice aspects of the DEIS.

<sup>(1)</sup>The Center for Business and Economic Research, University of Nevada, Las Vegas. *We, the Southern Nevadans*. 1999.

<sup>(2)</sup>1999 *Las Vegas Perspective*. Nevada Development Authority, April 1999.

<sup>(3)</sup>Walton, C., A. Zundel, R. Gladd, N. Gott, M. Manning Whittaker, E. Dixon, W. Fowler, P. King, N. Koon-Howard, K. Lauckner, M. Morris, and D. Nick. *Environmental Justice in the DOE Yucca Mountain DEIS*. University of Nevada, Las Vegas, January 2000.

### **Response**

DOE implements its responsibilities to environmental justice through DOE Environmental Justice Strategy [of] Executive Order 12898, April 1995. The DOE Environmental Justice Strategy list four goals:

1. Identify and address programs, policies, and activities of the Department that could have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;
2. Enhance the credibility and public trust of the Department by making public participation a fundamental component of all program operations, planning activities, and decisionmaking;
3. Improve research and data collection methods relating to human health and the environment of minority and low-income populations by incorporating full characterizations of risks, including the identification of differential patterns of subsistence consumption of natural resources among such populations; and
4. Further departmental leadership by integrating environmental justice criteria, as appropriate, with activities and processes related to human health and the environment.

The DOE environmental justice methodology strives to bring together results of analyses from different technical disciplines that focus on consequences to certain resources that could affect human health or the environment in order to determine disproportionately high and adverse human health or environmental effects on minority and low-income populations.

DOE has maintained an active public information program reaching out to all citizens. DOE believes that its public involvement process is consistent with the spirit and letter of the National Environmental Policy Act, and the Council on Environmental Quality and DOE regulations. In doing so, efforts were made to reach those segments of the population most affected by and interested in this Project. The outreach program incorporated lessons learned from the scoping meetings for the EIS and other subsequent interactions with the public to help ensure that stakeholders were informed of the hearing schedule and locations. After the initial list of hearing dates and locations were announced in the *Federal Register*, fliers were mailed to those on the EIS distribution list (more than 3,400 individuals). After the initial 16 hearings were advertised, five more hearings were added and three subsequent mailings were sent to stakeholders to notify them of the additional opportunities to provide oral comment. Prior to each hearing, DOE placed quarter-page advertisements in local newspapers, including Spanish language newspapers



where available. In addition, text for Public Service announcements was distributed to local radio and television stations. Press releases were also distributed to over 175 local and national stakeholders and media outlets before each hearing. Throughout the comment period, DOE informed the public (for example, mailings, at public hearings) of the various ways in which comments on the Draft EIS could be submitted, including the U.S. mail, facsimile, and electronic mailings via the Yucca Mountain Project web site at <http://www.ymp.gov>. The intent of this advertising campaign was to inform stakeholders of their opportunities to provide oral and written comments on the Draft EIS during the 199-day public comment period (August 13, 1999 through February 28, 2000). DOE did not provide technical information in the public notice materials, because the relevant information was available in the Draft EIS.

DOE has maintained a Native American Interaction Program with 16 tribes and one organization since the mid-1980s. Tribal representatives are named by their respective tribes to sit on a DOE-funded, self-organized committee called the Consolidated Group of Tribes and Organizations. The Group meets twice per year and participates in field trips to Yucca Mountain to impart cultural resource protection information and to become more aware of the studies being conducted. While the Group does not support the potential use of Yucca Mountain as a repository, they have agreed to be involved in an honest and participatory process. DOE will continue to support the Group and Native American program while carrying out the mission of characterizing the Yucca Mountain site.

In addition, DOE supported the preparation of a document, written by Native Americans, titled *American Indian Perspectives on the Yucca Mountain Site Characterization Project and the Repository Environmental Impact Statement*. This document was used as a primary reference in writing the Draft EIS to reflect Native American points-of-view throughout the document. The EIS explores the Native American perspective of the transportation of spent nuclear fuel and high-level radioactive waste in Section 4.1.13.4. Other examples of Native American viewpoints can be found in Sections 3.1.6.2.1, 3.1.6.2.2, and 4.1.5.2 of the EIS.

With regard to the number of minority and low-income populations that could reside along transportation routes, DOE determined that it is not necessary to examine the composition of the general population residing along existing spent nuclear fuel and high-level radioactive waste transportation corridors before DOE can reasonably conclude that there would be no disproportionately high and adverse impacts to minority and low-income populations from the transportation of radioactive materials. In addition, as described in Chapter 6 of the EIS, incident-free transportation and the risks from transportation accidents (the maximum reasonably foreseeable accident scenario would have 2.3 chances in 10 million of occurring per year would not present a large health and safety risk to the population as a whole, or to workers or individuals along national transportation routes. The low effect on the population as a whole also would be likely for any segment of the population, including minorities, low-income groups, and members of Native American tribes.

DOE met several times specifically with Clark County officials (as well as separately with representatives of Nye and Lincoln Counties) to discuss the preliminary approaches to impact analysis in the EIS, including socioeconomic impact analysis. There were also several meetings with representatives of the affected counties to overview status of the EIS preparation. There were also three special public information meetings conducted before the official Draft EIS public hearing process was initiated. This was in addition to the other public outreach activities described in this response.

#### **7.5.11 (9345)**

##### **Comment** - EIS001888 / 0059

Native Americans are included within the explicit definition of “minorities” in all government documents referencing environmental justice, and most can also be included in the definition of “low-income.” Adverse religious-cultural impacts to Native American tribes in the vicinity of Yucca Mountain from activities related to the proposed repository are acknowledged as an unresolved area of controversy in the Yucca Mountain DEIS (pp. S-65, 4-84, 4-85). It is unclear then why this is referred to as an area of controversy rather than as a violation of environmental justice. In addition, the DEIS does not consider the cumulative cultural impacts to Native American tribes from other government activities as well as the Yucca Mountain Project, such as activities related to the Nevada Test Site. Furthermore, in addition to other potential impacts, the DEIS does not consider the adverse impact of the proposed repository on the potential economic development of these communities.

Clark County recommends that DOE state and provide rationale for the statement that adverse religious-cultural impacts to Native Americans are regarded as controversial rather than a violation of environmental justice

provisions. DOE should also analyze the cumulative impact on the cultural interests of Native American tribes of all government activities in the vicinity, including the Nevada Test Site and consider the adverse impact of the proposed repository on the potential economic development of tribal communities.

**Response**

The Western Shoshone people maintain that the Ruby Valley Treaty of 1863 gives them rights to certain lands, including the Yucca Mountain region. However, as of the date of issue of this EIS, the land encompassing the Yucca Mountain site is Federally owned. A 1985 U.S. Supreme Court decision held that payment for the land has been made, that payment constitutes a final settlement, and that Western Shoshone claims to the land have been extinguished. DOE is aware that among the Native American community there is significant disagreement with the Court rulings and therefore, has identified this as an area of controversy. DOE acknowledges in the EIS that people from many Native American tribes have used the area proposed for the repository as well as nearby lands, that the lands around the site contain cultural, animal, and plant resources important to those tribes, and that the implementation of the Proposed Action would continue restrictions on access to the area around the repository site.

DOE defined the repository-related socioeconomic region of influence to be those counties within the State of Nevada that would likely experience the highest socioeconomic impacts from the construction, operation, and closure of a repository at Yucca Mountain. To identify these counties, DOE estimated the residential distribution of the future anticipated workforce by considering where current employees involved with the Yucca Mountain Project and the Nevada Test Site now reside. Based on this estimate, about 98 percent of the expected repository workforce would reside in Clark, Lincoln, and Nye Counties.

**7.5.11 (9502)**

**Comment** - EIS001888 / 0161

[Summary of comments noted by Clark County Nuclear Waste Division staff at various citizens' meetings.]

Concerned that the poor will be greatly impacted.

**Response**

As required by Executive Order 12898, DOE performs environmental justice analyses to identify and address, as appropriate, the potential for its actions to cause disproportionately high and adverse impacts to minority or low-income populations. The approach to environmental justices in the Draft EIS and Final EIS is consistent with DOE's own guidance, as well as that of the Council on Environmental Quality. The goal of this approach is to identify whether any high and adverse impacts would fall disproportionately on minority and low-income populations. The approach first analyzes the potential impacts on the general population as a basis for comparison. Second, based on available information, the approach assesses whether there are unique exposure pathways, sensitivities, or cultural practices that would result in high and adverse impacts on minority and low-income populations. If such potential impacts would be high and adverse, the approach then compares the impacts on minority and low-income populations to those on the general population to determine whether any high and adverse impacts fall disproportionately on minority and low-income populations. In other words, if high and adverse impacts on minority or low-income population would not appreciably exceed the same type of impacts on the general population, no disproportionately high and adverse impacts would be expected.

**7.5.11 (9638)**

**Comment** - EIS002074 / 0004

There is no other group of people that have a potential to be denied access or have limitations imposed to their practice of their cultural and religious beliefs associated with areas that would be impacted by the Yucca Mountain Project. We feel that there should be further consideration and expand the text on the environmental justice. Beyond that, there's been no epidemiological studies to really look at the impacts to the Native American population, specifically those that have been potentially impacted by any former activities that have been conducted on the Nevada Test Site, nor any potential impact that could result from the Yucca Mountain Project.

**Response**

As of the date of issue of this EIS, the land encompassing the Yucca Mountain site is Federally owned. A 1985 U.S. Supreme Court decision decided that payment for the land has been made, that payment constitutes a final settlement, and that the Western Shoshone tribal claim to land associated with the Ruby Valley Treaty has been

extinguished. Although DOE recognizes the sensitivity of this issue, it believes that the Supreme Court case settles these issues [United States v. Dann, 470 U. S. 39 (1985)].

The risk conversion factors used in the EIS are based on recommendations of the International Commission on Radiological Protection and Measurements and the National Council on Radiation Protection and Measurements. Chapter 8 of the EIS evaluates cumulative impacts to the environment including past, present and reasonably foreseeable future actions at the Nevada Test Site. Nuclear weapons testing and other activities that have associated contamination or the potential for contamination were evaluated for cumulative impacts with postclosure impacts from the proposed Yucca Mountain Repository. Section 8.3.2.1 of the EIS discusses these Nevada Test Site activities, the locations where these activities occurred, and the potential for long-term impacts with the repository.

#### **7.5.11 (9746)**

**Comment** - EIS001888 / 0330

[Clark County summary of comments it has received from the public.]

Commenters stressed that the EIS should fulfill commitments made in the 1986 Environmental Assessment relative to “potential for impacts on Native American Cultures” from the construction of the repository and the transportation of SNF and HLW (including ancillary features). The EIS should include an historical description of Native American experiences in the areas affected by the repository program, including the issues of land claims, treaty obligations, federal laws relating to cultural and religious rights of Native Americans, unsettled political and legal issues, and the potential applications of Indian law to repository issues. Impacts that must be assessed, for all Native American communities both in Nevada and nationally, include: economics (economic structure, direct/indirect employment, spending, public service effects, land use conflicts); infrastructure; emergency response/preparedness requirements (including the lack of medical facilities); state/tribal relationship effects that may be caused by state routing or risk management decisions; implications for tribal sovereignty; Native land claim issues and impacts; religious aspects; political activities; Native American relations with other governmental entities (neighboring rural and urban communities, state/local/federal agencies) and quality of life (psychological stress). In addition, the EIS should consider Native American views as to what constitutes an acceptable impact on nature.

#### **Response**

The EIS in several locations addresses Native American issues, concerns, and results of interactions regarding Yucca Mountain that have occurred for more than 10 years. In addition, DOE supported the preparation of a Native American perspectives document on the repository program (DIRS 102043-AIWS 1998) that the EIS discusses in several places. Section 3.1.1.4 of the EIS discusses land claims and Ruby Valley Treaty issues. Compliance with cultural resource and Native American-related laws has been an integral component of the Yucca Mountain Program since the early 1980s. Those issues are the primary cause for the ongoing Native American Interaction Program. DOE evaluated Native American socioeconomic issues as part of the environmental justice analyses for the EIS. With regard to transportation, although the Final EIS identifies rail as the preferred mode, DOE would select and analyze specific modes and routes at a later date pending approval of the repository site. At that time, the Department would conduct additional Native American analyses to address potential impacts of transportation on reservation lands and emergency preparedness training and involvement for applicable tribes. With regard to Native American views on what are “acceptable impacts” to nature, DOE understands through the Interaction Program that Native Americans view the environment in holistic and integrated terms and that the repository program and its components conflict with that view. DOE has documented those views in the EIS, has cited sections of AIWS (DIRS 102043-1998) and will continue to record information as the program continues.

#### **7.5.11 (10411)**

**Comment** - EIS001927 / 0026

The Environmental Justice Executive Order 12898 requires DOE to “ensure that public documents relating to human health or the environment are concise, understandable, and readily accessible to the public.” This DEIS has failed miserably to fulfill this directive.

#### **Response**

DOE has striven to make a very complex topic understandable. It developed the Summary for that purpose. It made the Draft EIS widely available. After announcing the initial list of hearing dates and locations in the *Federal Register*, the Department mailed fliers to those on the EIS distribution list (more than 3,400). After advertising the

initial 16 public hearings, it added five more and sent three more mailings to stakeholders to notify them of the additional opportunities to provide comments. Before each public hearing, DOE placed quarter-page advertisements in local newspapers, including Spanish-language newspapers. In addition, DOE distributed text for Public Service Announcements to radio and television stations. It also distributed press releases to more than 175 local and national stakeholders and media outlets before each public hearing. Throughout the comment period DOE informed the public (mailings, public hearings, etc.) of the ways in which they could submit comments on the Draft EIS, including U.S. mail, facsimile, and electronic mailings via the Yucca Mountain Project Internet site. The intent of this campaign was to inform stakeholders of their opportunities to provide comments on the Draft EIS during the 199-day public comment period (August 13, 1999 through February 28, 2000).

When the Draft EIS was published, DOE provided copies to 38 reading rooms in 17 states and the District of Columbia. It mailed more than 3,400 copies to stakeholders including Members of Congress, State and Territorial Governors, state legislators, Federal agencies, interest groups, and members of the public. The Department used project data bases and a postcard mailing to more than 4,000 individuals to notify them of the EIS publication. In addition, DOE shipped an electronic version of EIS references on to 38 reading rooms, and placed copies of references in libraries at the University of Nevada, Las Vegas and Reno, the Yucca Mountain Site Characterization Office Science Centers at Pahrump and Beatty, and DOE Headquarters in Washington D.C. Finally, DOE made the Draft EIS, its references, and supporting materials available on the Yucca Mountain Project web site. Copies of the Draft EIS were available in electronic and paper format at each public hearing. When it received requests for the Draft EIS and reference materials, DOE made every effort to respond in a timely manner.

DOE conducted public hearings at locations and times it believed were most convenient for the general public. It based its selection of public hearing locations and facilities on areas likely to be affected by the shipments and after consultation with county representatives, Members of Congress, DOE field offices, and other stakeholders. It scheduled five additional hearings to expand opportunities for stakeholders to comment. It planned for facilities and meeting room accommodations to provide ample seating, and held afternoon and evening sessions to accommodate and maximize attendance. In addition, it faxed reminders of meeting times and locations to local officials at each location to encourage their participation and that of their constituents. Information tables at all hearings provided information and literature.

#### **7.5.11 (10677)**

##### **Comment** - EIS001459 / 0004

I heard workers down in Las Vegas talk about how they had good jobs there. They're getting paid for doing what they're doing, supporting the nuclear industry, working for them. But what about us [referring to Native American communities]? They're getting rich out from our sacrifices. Is that fair?

##### **Response**

Thank you for your comment. Workers on the Yucca Mountain Project (DOE and its contractors) are from all backgrounds, and are compensated at levels commensurate with their education, experience, and skills.

#### **7.5.11 (11488)**

##### **Comment** - EIS002254 / 0001

I am appalled the way people throw out numbers, the way people throw out statistics and talk about the safety of the land, because I believe they are making the same mistake they made 500 years ago, when they look at a desert and see nobody there, and no kind of life there.

Let's stop moving stuff around on us, because when you look at me, you are looking at the last two percent of the people left on this hemisphere.

##### **Response**

Thank you for your comment.

#### **7.5.11 (11870)**

##### **Comment** - EIS000625 / 0003

It's insufficient, there is insufficient dollars that have been designated for native people in the event it affects us.

**Response**

The NWPA recognizes the role of tribal governments. Section 180(c) of the Act requires the Secretary of Energy to provide technical and financial assistance and funds to states and Native American tribes for training public safety officials of appropriate units of local government and tribes through whose jurisdictions DOE would transport spent nuclear fuel or high-level radioactive waste. The training must cover procedures for safe transport and for dealing with emergency response situations. DOE will fully implement this and all provisions of the Act. Section M.8 of the EIS discusses Section 180(c) requirements in detail.

Necessary and adequate funding for emergency response and for accidents that resulted in a release, if they occurred, would be a visible and closely tracked part of the operational budget of a repository system. The Price-Anderson Act provides liability coverage for commercial activities operating under a license from the Nuclear Regulatory Commission and for DOE activities by establishing a system of private insurance and Federal indemnification that generally ensures that as much as \$9.43 billion is available to compensate for damages suffered by the public from a “nuclear incident,” regardless of who causes the damage. Payment would be from government funds or, if public liability came from activities funded by the Nuclear Waste Fund (for example, activities at a geologic repository), from that Fund. The liability of all responsible parties is limited to the amount of coverage provided by the Price-Anderson Act system. State and local governments cannot be required to provide additional compensation. Price-Anderson Act indemnification would apply to the operators of a nuclear waste repository at Yucca Mountain and to transporters of nuclear waste from commercial nuclear utilities and DOE sites to the repository. Section M.6 discussed liability in greater detail.

**7.5.11 (12468)**

**Comment** - EIS001873 / 0052

P. 4-81. In my estimation Nevadans represent a minority which will be adversely affected, and downwinders are victims of environmental injustice.

**Response**

DOE implements its responsibilities in relation to environmental justice through its “Environmental Justice Strategy [of] Executive Order 12898,” (April 1995). The methodology the Department uses to assess environmental justice applies two tests: The first test assesses the potential for impacts to affected populations to be high and adverse to human health and safety; the second assesses the potential for high and adverse environmental impacts on minority or low-income populations. The EIS definition of a minority population is in accordance with the basic racial and ethnic categories reported by the Bureau of the Census, and does not apply to persons who live downwind of the repository.

The calculated dose for a hypothetical reasonably maximally exposed individual drilling a well 5 kilometers (3 miles) from the repository could receive an annual dose of 1.3 millirem per year, which is about 10 percent of the proposed Environmental Protection Agency standard of 15 millirem per year. The estimated dose from the air pathway would be less.

**7.5.11 (12633)**

**Comment** - 010279 / 0002

The Yucca Mountain project directly affects the fate of the Timbisha Shoshone Tribe. This is why the Timbisha Shoshone Tribe has petitioned the Secretary of the Interior to become an Affected Indian Tribe under the Nuclear Waste Policy Act of 1982.

**Response**

The NWPA includes provisions for tribal involvement in the proposed repository program. Sections 117, 118, and 180 of the Act include various measures that would require DOE to deal directly with tribes rather than through the State or local governments. Section 117(c) of the Act authorizes the Secretary of Energy to enter into written binding agreements with any affected Indian tribe regarding participation in the site characterization program for a repository. Such agreements would also govern preparation of impact reports and requests for technical and financial assistance for any affected Indian tribes. DOE has conducted regular interactions with representatives of the tribes holding membership in the Consolidated Group of Tribes and Organizations, which consists of officially appointed tribal representatives who are responsible for presenting their respective tribal concerns and perspectives regarding Yucca Mountain and the repository program to DOE.

#### **7.5.11 (12695)**

##### **Comment** - EIS001898 / 0008

The DEIS discussion of the impacts on minority and low income communities is restricted to the Bureau of the Census block group data. The discussion does not provide sufficient specificity with respect to community locations within the relevant census block groups or adequately identify potentially unique community characteristics. This information would facilitate the assessment of any potential for disproportionately high and adverse human health and environmental effects of the Proposed Action upon these communities.

##### **Basis:**

The discussion of Environmental Justice in the DEIS does not specifically identify where minority or low-income communities are located within each census block group. This problem is compounded by the relatively large geographic size of the Nevada census block groups analyzed in the DEIS. Determining the specific locations of the potentially affected communities in each relevant census block group would facilitate evaluation of the disproportionate impacts of the Proposed Action. DOE may find that state, local, and tribal governments possess demographic information relevant to the location of these communities.

DOE's conclusion that the Proposed Action will have no significant impact on the general population, and thus no significant impact on minority and low-income communities, appears not to address the possibility that cultural, social, historical or economic factors associated with minority and low income communities may amplify the effect of the Proposed Action and produce disproportionately high and adverse impacts upon these communities. The FEIS should discuss whether such factors exist and whether the consideration of such factors leads to the identification of significant effects that would otherwise be diluted by examination of the general population. This information could also be useful in identifying appropriate mitigative measures to address any disproportionate impacts resulting from the Proposed Action.

The NRC also notes that Section 3.1.13 (Environmental Justice) of the DEIS identifies Native Americans as having concerns about disproportionate impacts. The NRC's analysis of census data has found that there may also be African American and Hispanic minority groups in the affected area. It is not clear from the analysis in the DEIS whether these other minority groups were considered in determining if the Proposed Action has a potential disproportionate impact upon these communities.

##### **Recommendation:**

The FEIS discussion of environmental justice should identify the location and unique characteristics of minority and low income communities with sufficient specificity to enable a complete assessment of any disproportionate impacts upon those communities resulting from the Proposed Action.

##### **Response**

DOE determined that it is not necessary to examine the composition of the general population residing along existing spent nuclear fuel and high-level radioactive waste transportation corridors before DOE can reasonably conclude that there would be no disproportionately high and adverse impacts to minority and low-income populations from the transportation of radioactive materials. In addition, as described in Chapter 6 of the EIS, incident-free transportation and the risks from transportation accidents (the maximum reasonably foreseeable accident scenario would have 2.3 chances in 10 million of occurring per year would not present a large health and safety risk to the population as a whole, or to workers or individuals along national transportation routes. The low effect on the population as a whole also would be likely for any segment of the population, including minorities, low-income groups, and members of Native American tribes.

In response to comments, DOE also considered locations at which individuals could reside nearer to the candidate rail corridors and heavy-haul truck routes in Nevada as a way of representing conditions that could exist anywhere in potentially affected communities. For purposes of analysis, DOE assumed that a maximally exposed individual could reside or work as close as 4.9 meters (16 feet) to a potential heavy-haul truck route and 30 meters (98 feet) to a rail corridor. During the 24-year period of repository operations, if every shipment of spent nuclear fuel and high-level radioactive waste passed by these maximally exposed individuals, they would receive an estimated dose ranging

from about 2 millirem (increased fatal cancer probability of 1 in 1 million) for rail shipment to about 29 millirem (increased fatal cancer probability of 2 in 100,000) for heavy-haul shipments.

These exposures would be well below those received from natural background radiation, would not be discernible even if corresponding doses could be measured, and would not add measurably to other impacts that an individual could incur. For comparison, the lifetime likelihood of an individual incurring a fatal cancer from all other causes is about 1 in 4.

However, the Final EIS examines the composition of the population along candidate rail corridors in Nevada. Selecting among alternative new routes may offer opportunities to avoid high and adverse impacts that would fall disproportionately on low-income or minority populations relative to the general population that would not be present when considering existing transportation corridors. Therefore, even though the health effects from exposure to radioactive materials from transportation activities would not implicate environmental justice concerns in selecting new routes, other factors such as the impacts of the construction and use of a newly created route on land use, socioeconomics, noise, air quality, and esthetics may vary by location. In response to comments, DOE has updated and refined information germane to the environmental justice analysis. For example, the EIS now includes additional and more detailed mapping and information that describes the proximity of tribal lands to rail corridors in Nevada. Section 6.3.4 of the Final EIS presents the analysis of environmental justice impacts in Nevada.

#### **7.5.11 (12754)**

##### **Comment** - 010485 / 0005

The Supplement does not include the American Indian Writers Subgroup Document, and it is questionable to what extent the DOE has been willing to include comments from local Native residents, of Native writers at the National level who are critical of the proposed project and the EIS.

##### **Response**

DOE supported the preparation of an American Indian Writers Subgroup document (DIRS 102043-AIWS 1998) for use as a primary reference in the EIS. DOE did not ignore the Native American position or concerns, but agreed that applicable information would be summarized in the EIS (see Sections 3.1.1.4, 3.1.6.2, 3.1.6.2.2, and 4.1.13.4 of both the Draft and the Final EIS). DOE has the utmost respect for Native American viewpoints and belief systems. DOE is also aware of the special significance that Yucca Mountain and the surrounding area hold for Native American tribes and bands. DOE will continue to consider the importance of this relationship via an active partnership with Native American tribes and organizations through the established Yucca Mountain Native American Interaction Program.

#### **7.5.11 (13315)**

##### **Comment** - 010119 / 0002

I feel that the foods have not been looked at. Not only the food but the spirituality, the essence of me, where I came from, my religion, my being who I am. I'm a Southern Paiute. Things are not looked at because you're not scientifically proven. I don't need scientists to prove that the land is alive. I've seen it work. I've seen it do things. I've seen it do things that you would not think would be possible. It is, and I'm young, I'm not very old, and I speak from experience.

##### **Response**

DOE evaluated the potential dose to a person with a subsistence lifestyle who was assumed to consume wild game that had roamed within the land withdrawal area. During the construction, operation and monitoring, and closure of the proposed repository, the only radionuclides released would be naturally occurring radon and radon decay products, and noble gases. Of these, only the radon decay products would have the potential to accumulate in the environment in the edible portions of wild animals that could live within the land withdrawal area and later be consumed. Meat consumption accounts for about 5 percent of the dose from radon (see Appendix G.2 of the EIS for discussion of dose screening factors). If animals roamed the repository withdrawal area closer to the repository, and assuming the individual consumed 100 kilograms (220 pounds) of meat per year, then the concentration in meat could increase by as much as a factor of 5. The resulting dose to a person living at the land withdrawal area boundary could increase by about 20 percent. For the year of highest exposure, this would represent an increase from 1.8 to 2.2 millirem per year. No adverse radiation-related impacts would be expected at these levels of

exposure. Section 5.4 of the EIS discusses potential impacts to humans from groundwater consumption after repository closure (greater than 10,000 years).

### **7.5.11.1 Environmental Justice Issues**

#### **7.5.11.1 (7876)**

**Comment** - EIS001653 / 0043

Pg 3-95 The low-income population definition appears to be substantially different than the readily acceptable definition most government agency use. Low income is typically 50 percent of the area's median income. Very few areas in the country would probably qualify as low income under the DOE definition. Please explain this deviation.

#### **Response**

There are different ways to identify low-income populations. The DOE procedures for implementing Executive Order 12898, "Environmental Justice," is to identify minority and low-income communities by analyzing the Bureau of the Census population designation called "block groups." DOE pinpoints block groups where the percentage of minority or low-income residents is meaningfully greater than average. For environmental justice purposes, the pinpointed block groups are minority and low-income communities. Low-income populations are defined using the annual statistical poverty thresholds from the Bureau of the Census. Thus, DOE based its identification of low-income groups on populations that exceed a specific threshold, in this case, 10 percent above the State average of approximately 10 percent living in poverty.

DOE examined census block group data to determine if the comment's suggested methodology would identify substantially more low-income populations. In Clark, Nye, and Lincoln Counties, the DOE methodology identified 46, 5, and 1 low-income areas, respectively. For comparison, DOE identified block groups with median incomes of less than 50 percent of the State's median income of \$31,011 (1990 Census, the last definitive data for small areas such as block groups). This second methodology identified fewer low-income block groups, 30, 2, and 1, in Clark, Nye, and Lincoln Counties, respectively. Neither methodology identified any low-income block groups in either Lander or Eureka Counties.

#### **7.5.11.1 (9963)**

**Comment** - EIS002287 / 0004

What level of funding within the DOE budget for the Yucca Mountain Project is provided to tribal governments on a direct level, and/or unrecognized tribes and/or tribal communities?

For clarification, let me say that federally recognized tribes are those with a land base, either reservations or rancherias. Unrecognized tribes are those not recognized by the federal government, but are either in the process of acquiring or applying for such federal status as a recognized tribe. A third category of Indian people are those communities or tribes recognized by a state government but who do not receive federal assistance due to lack of federal recognition. Finally, there are Indian communities who reside within public lands and are recognized via community-based programs or are a nonprofit status.

It is imperative that all tribes be recognized and be included in all facets of the proposed Yucca Mountain Project. DOE, you must speak to these tribes directly. More time is required to ensure that such tribal governments, unrecognized tribes, and tribal communities be identified and included in the pursuit to provide the public the most inclusive, tangible, and viable EIS.

Tribal governments, state-recognized tribes, Indian communities, and unrecognized tribes range throughout the national landscape. Dialogue, action and inclusion by the DOE Yucca Mountain Project must include these tribal bodies and identify those affected by the proposed repository.

Most tribal entities have not been identified. Essential dialogue must include the voices of tribal peoples that confirm effects relative to socioeconomic, economic, cultural, spiritual, and emergency response preparedness and the assurance that the highest level of the quality of life will be continued.



**Response**

No Federally recognized tribes are provided funding directly from the budget used for the proposed Yucca Mountain Repository. For tribes to be eligible for formal oversight and funding from the project, they must meet the definition of “affected” under the NWP. DOE has not yet undertaken activities to implement Section 180(c) of the NWP, which states and local governments would be notified in advance of actual shipments of spent nuclear fuel and high-level radioactive waste. Section 180(c) will allow DOE to provide proposals seeking technical assistance grants to States for training of public safety officials of appropriate units of local government and Indian tribes through whose jurisdiction the Department would transport spent nuclear fuel or high-level radioactive waste. However, DOE maintains a Native American Interaction Program with 16 tribes and one organization comprising tribal representatives from the states of Nevada, California, Arizona, and Utah. Tribal representatives interact with DOE specifically regarding Yucca Mountain to better understand the issues and offer cultural resource management and other input for consideration by DOE. With regard to transportation issues in Nevada and nationally, it is premature for specific interactions with tribes because the modes and routes of transportation have not been specifically chosen. If and when that occurred, DOE would enter into direct interactions and consultations with tribes, as necessary, with regard to transportation routes. That involvement would include emergency preparedness planning, as applicable. More details about Section 180(c) and related requirements under the NWP are discussed in detail in Appendix M of the EIS.

**7.5.11.2 Native American Issues****7.5.11.2 (152)****Comment** - 5 comments summarized

Commenters stated that the external radiation exposure from the Proposed Action would cause harm to the traditional culture, diet, and lifestyle of Native Americans. A commenter noted that because Native Americans have traditional diets that include ingestion of animals such as deer, rabbit and others that could migrate into areas containing radiation, they could become victims of radiation exposure. Another commenter expressed the opinion that Native Americans will be exposed to radiation from drinking groundwater contaminated by radionuclides that have leaked from containers potentially stored at the Yucca Mountain site. Commenters noted that the survival of the Native American Nation depends on traditional lifestyles, food sustenance, and spiritual connection with the earth being as pure as possible without radiation.

**Response**

In response to public comments, DOE evaluated the potential dose to a person with a subsistence lifestyle who was assumed to consume wild game that had roamed within the land withdrawal area. During the construction, operation and monitoring, and closure of the repository, the only radionuclides released would be naturally occurring radon and radon decay products, and noble gases. Of these, only the radon decay products have the potential to accumulate in the environment in the edible portions of wild animals that could live within the land withdrawal area and later be consumed. Meat consumption accounts for about 5 percent of the dose from radon (see Appendix G.2 of the EIS for discussion of dose screening factors). If animals roamed the repository withdrawal area closer to the repository, and assuming the individual consumed 100 kilograms (220 pounds) of meat per year, then the concentration in meat could increase by as much as a factor of 5. The resulting dose to a person living at the land withdrawal boundary could increase by about 20 percent. For the year of highest exposure, this would represent an increase from 1.8 to about 2.2 millirem per year. No adverse radiation-related impacts would be expected at these levels of exposure. Section 5.4 of the EIS discusses potential impacts to humans from groundwater consumption after repository closure (greater than 10,000 years).

**7.5.11.2 (181)****Comment** - 128 comments summarized

Commenters stated that the United States government has not honored the Ruby Valley Treaty of 1863 with the Western Shoshone Nation. Commenters stated that there still remains an unsettled land dispute that DOE has ignored and that the treaty remains in full force and effect. Other commenters stated that the Treaty of Ruby Valley granted specific rights to the United States and that all other rights, authority, title, and interest within the boundaries of Western Shoshone Territory are reserved by the Western Shoshone Nation for the use and benefit of Western Shoshone citizens. Commenters stated that if the repository were to be constructed at the Yucca Mountain site, DOE would be trespassing on Shoshone land. Other commenters noted that the Western Shoshone have refused payment of 130 million dollars for the mountain because they want their land back. Commenters from the Western

Shoshone National Council contended that if their ancestors had known that such a substance as nuclear waste would be buried on their land, their ancestors would never have signed such a treaty. Others stated that the disposal of nuclear waste is outside the scope of the treaty. Another commenter stated the U.S. government is under investigation by an international human rights commission investigating the status of U.S. treatment of Western Shoshone people and the process by which the United States has claimed title to the land. Another commenter stated that given the history of the relations between the United States and the Native American tribes regarding broken treaties and land contamination, the EIS should have more fully recognized this issue in the EIS. Similarly, a suggestion was made to begin the summary with a discussion of Opposing Native American Viewpoints and that because of its importance and the Ruby Valley Treaty of 1863, included in the section on Land Use and Ownership. Finally, some commenters stated that the U.S. Supreme Court decision stating that claims to the land under the treaty were gradually extinguished, and that the Western Shoshone people were compensated for the land is invalid.

#### **Response**

Although the Treaty with the Western Shoshone of 1863 (commonly known as the Treaty of Ruby Valley) was intended to formalize a peaceful relationship between the Western Shoshone people and the Federal Government, this treaty has been the subject of an ongoing controversy over the land claimed as ancestral territory by the Western Shoshone.

DOE, as a Federal agency, must abide by a 1985 U.S. Supreme Court decision that the Western Shoshone claim to land associated with the Ruby Valley Treaty is no longer valid, and that fair compensation has been made. The Western Shoshone people maintain that the Ruby Valley Treaty of 1863 gives them rights to 97,000 square kilometers (24 million acres) in Nevada, including the Yucca Mountain region. In 1977, the Indian Claims Commission granted a final award to the Western Shoshone people, who dispute the Commission findings and have not accepted the monetary award for the lands in question. In 1985, the U.S. Supreme Court ruled that even though the money has not been distributed, the United States has met its obligations with the Commission's final award, and, as a consequence, the aboriginal title of the land had been extinguished.

DOE recognizes that Native American people living in areas near Yucca Mountain have concerns about protection of traditional uses and the spiritual integrity of the land that extend to the propriety of the Proposed Action, and that the implementation of the Proposed Action would continue restrictions on access to the site as discussed in Section 4.1.13.4 of the EIS. Furthermore, the presence of a repository would represent an intrusion into what Native Americans consider an important cultural and spiritual area. DOE will continue to consider Native American input regarding the cultural resources and religious values and beliefs of the Yucca Mountain area.

DOE also recognizes that Native American tribal governments have a special and unique legal and political relationship with the Government of the United States, as established by treaty, statute, legal precedent, and the U.S. Constitution. DOE recognizes and commits to a government-to-government relationship with Native American tribal governments. DOE will continue to interact and consult with tribal governments and will work with representatives of the Consolidated Group of Tribes and Organizations to ensure that tribal rights and concerns are considered before taking actions, making decisions or implementing programs that could affect tribes.

With regard to the location of information on Opposing Native American Viewpoints and the content of the Land Use and Ownership section, DOE has attempted to logically organize the material presented in the EIS by environmental discipline. Other information, such as opposing Native American viewpoints, has been placed in its own numbered section because DOE does want to clearly present the viewpoints expressed by Native American groups.

#### **7.5.11.2 (240)**

##### **Comment** - 89 comments summarized

Commenters stated the belief that the proposed action to construct a repository at the Yucca Mountain site is a form of environmental racism and colonialism and that DOE was simply brushing aside the concerns of Native Americans in concluding that there would be no disproportionately high and adverse impacts to minority or low-income populations from the Proposed Action. Some commenters stated that racial discrimination played a role in the selection of Western Shoshone territory for site investigation and recommended that a thorough investigation would be required to determine the root cause of racial discrimination. They stated that the Draft EIS did not adequately address environmental justice concerns with respect to Native American tribes and that for years

decisions about where to locate environmental hazards were based on where the people would have the least amount of power to fight against those hazards. Commenters noted that Yucca Mountain is sacred to Native Americans, that the mountain is located entirely within the boundaries of their native lands, and that to either ship waste to or to use it as an underground repository would be immoral because of the effect on the Shoshone Nation. Another commenter stated that there was a disproportionate share of nuclear testing, uranium mining, and other contaminating activities near Native American lands. Several commenters compared construction of the repository at the Yucca Mountain location with that of constructing a repository at the Vatican, Salt Lake City, or Mecca. Commenters stated that the proposed action was particularly unjust to Native Americans and that the EIS needed stronger language with respect to Native American needs and concerns. They noted that the Draft EIS acknowledges that the Native American tribes consider the construction of a repository at the Yucca Mountain site to be intrusive and to be an adverse impact, and that it did not respond to the differing Native American position. Other commenters stated that the American people as a whole are being discriminated against because of the generation of this type of waste. Another commenter referred to the 1986 Environmental Assessment for Yucca Mountain (DIRS 100136-DOE 1986), which made a commitment to perform detailed analysis of Native American impacts during the Environmental Impact Statement process, and stated that the Draft EIS did not contain such information. Commenters further stated that the United States has made a commitment to uphold the principles of Environmental Justice through the President's Executive Order 12898 and that DOE should not revert to past practices to push through a decision on Yucca Mountain that could disproportionately affect the poorest and least powerful communities. In light of the Native American views on the construction of the repository, commenters questioned how DOE could claim there would be no disproportionately high and adverse impacts to minority or low-income populations. One commenter stated that DOE had acknowledged that there could be impacts to Native American cultural sites along the proposed rail spur routes, but then completely ignored wider issues and impacts with respect to Native American communities. Others urged DOE to be serious about the handling of Native American concerns and recommended that the Draft EIS be rewritten to more accurately classify the impacts to minority and low-income communities and to the Western Shoshone Nation in particular.

### **Response**

DOE's proposal to construct and operate a geologic repository at Yucca Mountain for the disposal of commercially generated spent nuclear fuel and high-level radioactive waste is based on the requirements of the NWP. Congress enacted NWP to address the problem of disposing of nuclear waste generated by commercial nuclear power plants. Under the Act, DOE is directed to take title to commercial spent nuclear fuel and take responsibility for its ultimate disposition. The Act also establishes a comprehensive process for determining the suitability of Yucca Mountain as a repository and for determining whether a monitored geologic repository should be constructed at the site.

DOE believes that it has appropriately considered Native American viewpoints by incorporating into the EIS the potential impacts to historic and other cultural resources identified by Native Americans as important to sustaining and preserving their cultures.

DOE initiated its Native American Interaction Program in 1987 to consult and interact with tribes and organizations on the characterization of the Yucca Mountain site, and the possible construction and operation of a repository. As part of this program, tribal representatives are named by their respective tribes to sit on a DOE-funded, self-organized committee called the Consolidated Group of Tribes and Organizations. This organization meets twice a year and participates in field trips to Yucca Mountain to impart cultural resource protection information and to become more aware of the studies being conducted. Additionally, specialized Native American subgroups have been periodically convened to interact with DOE on specific tasks including ethnobotany, review of artifact collections, field archaeological site monitoring, and the EIS process. While the Consolidated Group of Tribes and Organizations does not support the use of Yucca Mountain as a repository, it has agreed to be involved in an honest and participatory process.

During preparation of the EIS, DOE interacted with Native American tribes on a range of topics of interest to assess their viewpoints and perspectives. DOE supported the American Indian Writers Subgroup of the Consolidated Group of Tribes and Organizations in its preparation of *American Indian Perspectives on the Yucca Mountain Site Characterization Project and the Repository Environmental Impact Statement* (DIRS 102043-AIWS 1998) used as a resource in the preparation of the EIS. This document discusses site characterization at Yucca Mountain and the Proposed Action in the context of Native American culture, concerns, and views and beliefs concerning the

surrounding region. Section 4.1.13.4 of the EIS presents excerpts from this document to reflect a Native American point of view.

Based on the results of the report and these interactions, DOE acknowledges in the EIS that people from many Native American tribes have used the area proposed for the repository as well as nearby lands; that the lands around the site contain cultural, animal, and plant resources important to those tribes; and that the implementation of the Proposed Action would continue restrictions on access to the repository site environs. Furthermore, the presence of a repository would represent an intrusion into what Native Americans consider an important cultural and spiritual area. Although these viewpoints may suggest that the Yucca Mountain site should not be developed, DOE and the Consolidated Group of Tribes and Organizations recognize that restrictions on public access to the area have been generally beneficial and protective of cultural resources.

#### **7.5.11.2 (832)**

**Comment** - EIS000160 / 0004

Those who know that most acutely are the Western Shoshone people, who claim Yucca Mountain as sacred land, and who will be the first people exposed when Yucca Mountain leaks.

#### **Response**

DOE understands that the Western Shoshone people consider Yucca Mountain sacred and has documented that viewpoint as part of the Native American Interaction Program. The EIS evaluated the estimated radiation dose to members of the public during both the operational phase and from long-term repository performance. In all cases the estimated doses were well below regulatory limits.

In response to public comments, DOE evaluated the potential dose to a person who was assumed to consume wild game that had roamed within the land withdrawal area. During the construction, operation, and closure of the repository, the only radionuclides released would be naturally occurring radon and radon decay products, and noble gases. Of these, only the radon decay products have the potential to accumulate in the environment in the edible portions of wild animals that could live within the land withdrawal area and later be consumed. Meat consumption accounts for about 5 percent of the dose from radon (see Appendix G.2 of the EIS for discussion of dose screening factors). If animals roamed the repository withdrawal area closer to the repository, and assuming an individual consumed 100 kilograms (220 pounds) of meat per year, then the concentration in meat could increase by as much as 5 times the normal concentration. The resulting dose to a person living at the land withdrawal boundary could increase by about 20 percent. For the year of highest exposure, this would represent an increase from 1.8 to about 2.2 millirem per year. No adverse radiation-related impacts would be expected at these levels of exposure.

During the postclosure period, radionuclides from the repository could occur in groundwater and in well water pumped for crop irrigation and consumption in the Amargosa Valley. The calculated dose for a hypothetical maximally exposed individual drilling a well 5 kilometers (3 miles) from the repository could be 1.3 millirem per year, which is about 10 percent of the proposed Environmental Protection Agency standard of 15 millirem per year. Section 5.4 of the EIS discusses potential impacts to humans from this use.

#### **7.5.11.2 (1304)**

**Comment** - EIS000433 / 0001

I write to you with concern regarding the DOE's EIS for Yucca Mountain. The EIS should have, but didn't, do a number of crucial things. I think the EIS should have investigated Shoshone land rights in the area concerned; I believe we have a moral and legal obligation to better understand Shoshone land claims before moving ahead with YM. The EIS should also analyze the considerable negative environmental consequences that may be associated with specific routes along which nuclear waste would travel to YM. This document should also explain why, given how common radioactive leakage has been at other sites, the DOE expects YM to be so certainly safe. Finally, as a Nevadan, I don't know why the DOE wants our state to be the place where one of the nation's most dangerous problems gets "solved." To put us at risk to make safe the people who produced this waste isn't right.

I encourage you to come up with an EIS that more accurately reflects the legitimate concerns that we, as Nevadans, have about the dangers YM would expose us to. The current EIS does not fully address my concerns.

**Response**

A 1985 U.S. Supreme Court [United States v. Dann, 470 U.S. 39 (1985)] held that the Western Shoshone claim to the land associated with the Ruby Valley Treaty has been extinguished, and that fair compensation has been made. DOE recognizes that the Western Shoshone community disagrees with these rulings.

DOE bases the safety and suitability of the Yucca Mountain site on the results of the extensive site characterization program it has conducted for more than 10 years. That program has identified no characteristics of the site to date that would result in an unsuitability determination. Transportation impacts were evaluated in Chapter 6 of the EIS. Section 6.1.1 of the EIS provides an overview of national transportation impacts, including estimated impacts from loading operations, incident-free transportation, and accidents for both the mostly legal-weight truck and mostly rail national transportation scenarios. Section 6.2.1 of the EIS gives an overview of the environmental impacts of transporting spent nuclear fuel and high-level radioactive waste in the State of Nevada.

The permanent disposal of spent nuclear fuel and high-level radioactive waste and the safe transportation of these materials to a disposal site constitute a national issue. One of the provisions of the NWPA provides that the EIS does not need to consider any site other than Yucca Mountain for repository development. DOE could not pursue the use of Yucca Mountain as a repository until the Secretary of Energy decided whether to recommend approval of the site to the President and a Presidential site designation subsequently became effective.

**7.5.11.2 (1433)**

**Comment** - EIS000377 / 0003

The EIS needs stronger language relative to Native American needs and concerns. In S.4.1.6, such language that would reflect or specifically say cultural resources -- or this cultural resource section, language requiring the Department of Energy to not only recognize but work side by side with the affected units of tribal governments as the tribes deem necessary, to protect their economies, projected economies, archeological/cultural resources, traditions, and to ensure the spiritual integrity of lands within the proposed repository and in outlying affected areas.

**Response**

Section S.4.1.6 is part of the EIS summary. DOE initiated the Native American Interaction Program in 1987 to consult and interact with tribes and organizations on the characterization of the Yucca Mountain site and the possible construction and operation of a repository. DOE has been working closely with the Consolidated Group of Tribes and Organizations which consists of officially appointed tribal representatives who are responsible for presenting their respective tribal concerns and perspectives to the Department, as discussed in Section 3.1.6.2.1 of the EIS. The American Indian Writers Subgroup, consisting of representatives from three tribal groups with membership in the Consolidated Group of Tribes and Organizations, prepared *American Indian Perspectives on the Yucca Mountain Site Characterization Project and Repository Environmental Impact Statement* (DIRS 102043-AIWS 1998). This report describes the relationship between Native American people and DOE and discusses impacts of the Proposed Action while recommending impact mitigation approaches for reducing potential impacts to Native American resources and other heritage values in the Yucca Mountain region. Sections 3.1.6.2.2, 4.1.5.2, and 4.1.13.4 of the EIS express the Native American viewpoint. DOE would continue to incorporate its Native American Interaction Program efforts with the Consolidated Group of Tribes and Organizations to ensure that tribal rights and concerns are considered before DOE takes action, makes decisions or implements programs that could affect tribes.

**7.5.11.2 (1708)**

**Comment** - EIS000640 / 0002

In this cultural concept, when you're taking this down to Yucca Mountain, the transportation, we are talking about genocide. And we [Western Shoshone] have long been participants in this. So I wanted you to know that. And the radiation that comes from this transportation, we will be the long-term participants in that, and the people that live here will be also. But the animals that live there will bring it back to us, and we'll have double jeopardy because that's part of our traditional foods.

**Response**

The public health effects from incident-free (routine) transportation of radioactive materials is dependent on four factors: the radiation rate at the surface of the cask, the distance from the passing cask to the individual, the duration of each exposure, and the number of shipments which pass by the individual. None of these factors vary from

individual-to-individual within segments of the general population, and therefore the public effects of transporting radioactive materials would be the same for the Western Shoshone as it would be for individuals in any other segment of the general population. Further, because the dose received by any individual would be so low, the potential impacts on any subset of the general population (e.g., the Western Shoshone) would not be high and adverse. DOE has also evaluated additional unique pathways for exposure such as consuming game that had roamed across the withdrawal area and concluded that no high and adverse health impacts would be likely.

**7.5.11.2 (2340)**

**Comment** - EIS000638 / 0007

Our position is that we feel from the information we have now that this project as proposed and the transportation will have a profoundly negative impact on the political, economic, cultural, social, and spiritual survival of the Western Shoshone nation.

**Response**

DOE will continue to document Native American issues and concerns through the Native American Interaction Program that concentrates on the protection of cultural resources at Yucca Mountain and promotes a government-to-government relationship with tribes and organizations. That program has documented Native American information on the proposed repository site since the late 1980s. The Consolidated Group of Tribes and Organizations consists of officially appointed tribal representatives from 17 tribes and organizations who are responsible for presenting their respective tribal concerns and perspectives to the Department. Once modes and locations of transportation activities were identified, additional cultural surveys and interactions with Native American tribes along routes would be conducted.

The program is designed to achieve and maintain compliance with public health and safety and environmental regulations. DOE also has an active relationship with Federal, state, and local regulatory officials to ensure the appropriate regulatory permits and approvals are in place for project activities.

**7.5.11.2 (3702)**

**Comment** - EIS000365 / 0002

I have spent a large amount of my time over the last four years working with the Timbisha, an Indian tribe that is federally recognized but as of now has no federal lands in Death Valley, but Death Valley is their ancestral homeland. They have lived there since time immemorial, and Yucca Mountain is one of the natural features that is part of their native lifeways.

I wanted to call to the attention of the Department of Energy and other people that they are the folks that are basically living in the shadow of Yucca Mountain, and they are not mentioned in the EIS, and the EIS basically draws as a conclusion that there would be no disproportionate impact on minority population, and I think that that is not correct.

The Timbisha do exist, even though they don't have their lands back, and certainly they are at the front line of exposure.

**Response**

The Timbisha Shoshone Trust Lands are discussed in Section 8.1.2.2 of the Final EIS. The EIS acknowledges that because of the proximity of some of the candidate corridors, there could be cumulative impacts between their use and the proposed repository with regard to land use, regional water use, and transportation impacts. The analysis found that construction and operation of a rail line in the Bonnie Claire Alternate of the Caliente or Carlin Corridor would restrict access across the Scottys Junction parcel of the Timbisha Shoshone Trust Lands. DOE will continue to listen to and document applicable issues that arise about the siting of a repository with respect to Native American concerns. As discussed in Section 3.1.6.2.1 of the EIS, DOE has worked closely with the Consolidated Group of Tribes and Organizations, of which the Timbisha Shoshone Tribe is a member, to better understand tribal perspectives and concerns.

With regard to the potential exposure of the people living on the Timbisha Shoshone Trust Lands, DOE determined that a person living near the withdrawal boundary who was assumed to consume wild game that had roamed within

the land withdrawal area would increase this person's exposure from 1.8 to about 2.2 millirem per year. No adverse radiation-related impacts would be expected at these levels of exposure.

**7.5.11.2 (3785)**

**Comment** - EIS001264 / 0003

After all the atrocities we, the American people have committed against the native Americans, they continue to attempt to protect us from ourselves. God Bless Native Americans and those who assist them in legal representation. The DOE should protect our families as well as their own.

**Response**

Thank you for your comment.

**7.5.11.2 (4120)**

**Comment** - EIS002097 / 0004

How many people did we massacre in the other part of the country with a development that we done? Then we going still to do those things to us here in United States? We say this is supposed to be a peaceful land. I don't see that at all. When I talk to the DOE, the people, they always say you're [ward] of the government. Where is the promise that they say they were going to take care of us? Where is that treaty they say, "This is your land"? They're not here. Somebody is telling somebody a lie here. This is my concern about each and everyone of you today. Your young folks that you're going to bring on to this mother earth, what kind of water are you going to give them? What kind of food are they going to be eating?

We are already beginning to see throughout the world contamination of all kinds. Plant life are dying. We see that. Bird life is dying. Everything is dying, and it, the DOE, the Congress -- I guess you say it's the Congress that makes the decision. They don't have no feeling for us. Don't seem like it to me. This is something that we got to think really strong on and talk about it, not to put it under the rug, let somebody else do the dirty work.

We are the people. Supposed to be the backbone of our government, I've been told. You are the backbone of the government, each and every one of you. We got to have a healthier life. We cannot leave the dirty mess that we're putting on this mother earth when we leave. Maybe some of you people got homes to go back to. We as a native people can't. This is where we are born and raised. This is our land, but some of our ancestors come from some place else. Maybe you think you can go back over there. I don't think so. They're going to tell you you're already over there, so don't come back.

**Response**

Thank you for your comment. DOE is very serious about their responsibility for ensuring that the public health and safety and the environment are protected while carrying out the mission of the proposed repository development at Yucca Mountain. Part of that responsibility is understanding the potential for radionuclide migration within the environment. During the period of construction, operation and monitoring, and closure at Yucca Mountain, the only radionuclides expected to be released are naturally occurring radon and radon decay products, and noble gases. Of these, only the naturally occurring radon decay products have the potential to accumulate in the environment, including native plants and wildlife that might live both inside and outside the land withdrawal area and later are consumed by humans or animals. These radionuclides are naturally occurring and indistinguishable from the background radiation present in the soil around Yucca Mountain. The potential dose to humans from consumption of water, native plants, and wildlife would be about the same as consuming domestic water, plants, and livestock. Harvesting native plants and wildlife from inside the land withdrawal area could result in slightly higher radiation doses, but these doses would still be very low and a small fraction of natural background radiation and regulatory dose limits. The potential for external exposure to native plants and wildlife is very low. A discussion of potential impacts to biota is found in Section 4.1.4.2 of the EIS.

**7.5.11.2 (4349)**

**Comment** - EIS001182 / 0002

What consideration has been given to the impact of the proposed program on the sacred sites of Native Americans?

**Response**

The DOE has worked closely with the Consolidated Group of Tribes and Organizations to document, record, and consider the Native American point of view. By working together, many positive steps have been taken to protect and preserve cultural resource items and areas on and near Yucca Mountain. The DOE has gained valuable insight into Native American culture and beliefs and such knowledge would be considered during the decision-making process.

**7.5.11.2 (4786)**

**Comment** - EIS001475 / 0002

Our tribal leaders are saying how feasible this is going to be to our land, to our native land. There's poverty there. We have broken windows, we have cars that are not running. And now we have new vehicles. We have brand new vehicles to improve our reservation, but hasn't been improved yet.

You know, these are money talk. This is money talk. Nuclear energy has a lot of money. They're rich. So is their tribal leaders, and so are the people that are supporting it. They have a lot of money. But what about those of us that doesn't have any money? What about those of us that are not supporting this issue because we're standing up for the rights of our future generation so that they can be able to have an economic development that is healthy for them? We don't have anything.

**Response**

Thank you for your comment.

**7.5.11.2 (5139)**

**Comment** - EIS001441 / 0115

In Vol. I-Impact Analysis, Chapters 1-15, Environmental Consequences of Repository Construction, Operation and Monitoring, and Closure, 4.1.13, Environmental Justice, the DOE missed the mark. E.O. 12898 requires federal agencies to specifically consider ethnic minorities with subsistence lifestyles. This is not considered in the DEIS.

The Western Shoshone government is faced with a serious public health crisis from legacy nuclear weapons testing of the United States and the United Kingdom which have seriously contaminated the soil and groundwater of Western Shoshone Territory. We have undertaken research into the existing uncertain health effects which are known to be plausible from radiation exposure. We are currently in the process of determining the causal relationship between nuclear weapons testing and our own experience of adverse health effects. It is from this informed experience that we present these comments to the US DOE here today.

It is primarily from lifestyle differences that we are understand that our exposure from radioactive iodine-131 in fallout from the Nevada Test Site was seven times greater than non-native populations. Lifestyle differences are important, but are not considered in the DEIS.

It is primarily from lifestyle differences that we now understand that our exposure from radioactive iodine-131 in fallout from the Nevada Test Site was seven times greater than non-native populations. Lifestyle differences are important, but are not considered in the DEIS.

The National Council believes racial discrimination plays a role in the selection of Western Shoshone Territory for site investigation as a proposed high-level nuclear waste repository from nine sites to one politically weak one within the Western Shoshone Nation. We expect the United States DOE to investigate the processes by which site selection and standards are proposed to uncover institutional racism which the National Council believes results in forcible trespass by the DOE.

Since racism and discrimination are not openly admitted in the process of selecting a nuclear waste repository, a cursory review is inadequate to identify racial discrimination. A thorough investigation is therefore necessary to get to the root cause of racial discrimination.

In conclusion, we hereby request that DOE honor their trust obligation to the Indian Tribes in developing the FEIS, follow the federal law concerning the legal rights of the Tribes to fully participate, equally. Please work with the



Western Shoshone people to understand the full scope of probable impacts, for our sake and that of our future generations.

**Response**

In response to comments on the Draft EIS, DOE evaluated the potential impact to a person with a subsistence lifestyle who consumed game that was assumed to graze in the footprint of the land withdrawal boundary. During the construction, operation, and closure phase of the proposed repository, only naturally occurring radon and radon decay products, and noble gases would be released. Of these, only the radon decay products have the potential to accumulate in the environment in the edible portions of wild animals that could live within the land withdrawal area and later be consumed. Meat consumption accounts for about 5 percent of the dose from radon (see Appendix G.2 of the EIS for discussion of dose screening factors). If animals roamed the repository withdrawal area closer to the repository and if it is assumed that an individual consumes 100 kilograms (220 pounds) of meat per year, then the concentration in meat could increase by as much as 5 times the normal concentration. The resulting dose to a person living at the land withdrawal boundary could increase by about 20 percent. For the year of highest exposure, this would represent an increase from 1.8 to about 2.2 millirem per year. No adverse radiation-related impacts would be expected at these levels of exposure. Section 4.1.4.2 of the EIS discusses potential impacts to biota.

After repository closure and far in the future (more than 10,000 years), radionuclides from the repository could leach into groundwater used for crop irrigation and for drinking water in the Amargosa Valley. The calculated dose for a hypothetical maximally exposed individual drilling a well 5 kilometers (3 miles) from the repository could receive an annual dose of 1.3 millirem per year, a dose that is about 10 percent of the proposed Environmental Protection Agency standard of 15 millirem per year. The potential dose from the air pathway would be less. Section 5.4 of the EIS discusses potential impacts to humans from this use, and Section 5.9 discusses biological resource impacts.

Congress directed the Secretary of Energy to characterize only Yucca Mountain as a potential location for a geologic repository through the 1987 amendments to the Nuclear Waste Policy Act and set forth a process for the Federal Government to decide whether to designate Yucca Mountain site for a repository. Therefore, the scope of the EIS is limited to informing the Secretary's decision whether to recommend to the President an action to construct, operate and monitor, and eventually close a geologic repository for disposal of spent nuclear fuel and high-level radioactive waste.

DOE initiated the Native American Interaction Program in 1987 to consult and interact with tribes and organizations on the characterization of the Yucca Mountain site and the possible construction and operation of a repository. DOE has also been working closely with the Consolidated Group of Tribes and Organizations, which consists of officially appointed tribal representatives who are responsible for presenting their respective tribal concerns and perspectives to the Department.

**7.5.11.2 (5165)**

**Comment** - EIS001910 / 0004

There are various points in the history of this country when individuals own up to misgivings and inaction of the federal government in exercising their responsibilities. For instance, the goal of Indian Reorganization Act of 1934 (IRA), 25 U.S.C. s.465, was to provide for the recovery of the Indian land base and reestablish tribal economic, governmental and cultural life; One of the IRA's principal authors, Congressman Howard of Nebraska, noted at that time." [T]he land was theirs under titles guaranteed by treaties and law; and when the government of the United States set up a land policy which, in effect, became a forum of legalized misappropriation of the Indian estate, the government became morally responsible for the damage that has resulted to the Indians from its faithless guardianship."

**Response**

Thank you for your comment.

**7.5.11.2 (5248)**

**Comment** - EIS000508 / 0004

The comfort and safety zone of the American population is just as important as any scientific reasons for doing or not doing anything. A lot of scientific endeavors have been to benefit humankind to make us more comfortable, to make us more safe. Emotions should not be thrown away for science.

**Response**

Thank you for your comment.

**7.5.11.2 (5607)**

**Comment** - EIS001887 / 0233

Page 4-38; Section 4.1.5.2 - Impacts to Cultural Resources from Construction, Operation and Monitoring, and Closure

The State's scoping comments on the 1995 Notice of Intent pointed out that assessment of potential Yucca Mountain impacts for Native American communities requires special attention to the unique laws, regulations, history, and culture of these peoples. In order to estimate potential impacts, the Draft EIS must provide an understanding of both the current and past relationship of Native American people to federal, state, and local governments and communities. Particular attention must be paid to specific Native American communities and connections and claims to the repository site. A similar assessment should be made for ancillary facilities, transportation routes, and other program-related activities. Topics to be addressed should include:

1. A historical description of Native American experiences in the areas affected by the repository program, including the issues of land claims, treaty obligations, federal laws relating to cultural and religious rights of Native Americans, unsettled political and legal issues, the potential applications of Indian law to repository issues, including transportation route selection and use, and the description of current and future socioeconomic conditions for Native Americans.
2. The economic structure of Native American communities and how these conditions might be affected by the Proposed Action.
3. A specific description of any direct and indirect employment, spending, and public service effects for Native Americans.
4. The location of Native American communities in relation to transportation routes, including the potential for accidents and emergency response to accidents.
5. The potential stigma impacts on Native American communities and businesses, including those economic activities now in development or likely to be developed in the future.
6. The role of the repository program in Native American political activities, including how the program might influence tribal or community behaviors.
7. The effect of the repository program on Native American relations with other governmental entities, including neighboring rural and urban communities, as well as county, state, and federal governments.
8. Assessment of the quality of life impacts of the program, including the conditions of psychological stress and its effects upon Native American community behaviors. The ways in which the repository program might influence or change Native American culture is especially important to a socioeconomic impact assessment.
9. Evaluation of the attitudes and opinions of Native American people toward the repository program, the DOE management of this and other activities important to them, and the effects upon their support or opposition.

The Draft EIS fails to adequately address any of these areas.

**Response**

DOE has maintained a Native American Interaction Program with 16 tribes and one organization since the late 1980s. That program has contributed to cultural resource protection initiatives at the Yucca Mountain site and has identified issues associated with the site characterization program and potential future repository development important to Native American groups. DOE acknowledges that people from many Native American tribes have used the area proposed for the repository as well as nearby lands, that the lands around the site contain cultural, animal, and plant resources important to those tribes, and the implementation of the Proposed Action would

continue restrictions on access to the repository site. DOE supported the preparation by Native Americans of a reference document (DIRS 102043-AIWS 1998) that presents a Native American point of view about the potential siting of a repository at Yucca Mountain. DOE recognizes that it could not construct and operate a repository at Yucca Mountain without impairment to that point of view.

DOE has modified the language in Section 4.1.13 of the EIS. A Native American perspective of the proposed repository is described in Section 4.1.13.4 of the EIS. Although the EIS identifies rail as the preferred mode of transportation, both nationally and in Nevada, DOE would conduct additional National Environmental Policy Act analyses as part of the selection of a specific transportation alignment in Nevada. DOE believes that the environmental justice analysis in the EIS is adequate and appropriate to address the requirements of Executive Order 12898, "Environmental Justice."

#### **7.5.11.2 (5610)**

**Comment** - EIS001887 / 0236

Page 4-38; Section 4.1.5.2 - Impacts to Cultural Resources from Construction, Operation and Monitoring, and Closure

Most Native Americans in Nevada see the unwanted disturbance of cultural resources as the inevitable outcome of the Yucca Mountain project. They clearly would prefer that no disturbance take place at all and do not believe that impacts associated with the proposed repository would be mitigable.

#### **Response**

Certain ground disturbing activities have been necessary during site characterization and would likely be required during repository construction. However, DOE has a proceduralized preactivity survey and mitigation process associated with all ground disturbing activities and would continue this process during the repository phase of the program if the decision were made to construct the repository. Cultural resources located during such surveys are recorded and protected in accordance with applicable laws and regulations. The repository activity is relocated if possible. If project activities cannot be relocated, cultural sites undergo data recovery as mitigation. DOE understands that such mitigation may not be considered appropriate by Native Americans. DOE attempts to involve Native American people through the Native American Interaction Program in decisionmaking processes associated with cultural resource management at the Yucca Mountain site.

#### **7.5.11.2 (5611)**

**Comment** - EIS001887 / 0237

Page 4-38; Section 4.1.5.2 - Impacts to Cultural Resources from Construction, Operation and Monitoring, and Closure

The Native American tribes in the immediate vicinity of the Yucca Mountain project area and along potential transportation routes are, for the most part, economically disadvantaged. Reservations and communities in Nye, Lincoln, and Inyo counties are rural and isolated and either lack a land base or have land bases too small to support their populations by ranching or other locally common means. A large number of people are unemployed, underemployed, and/or living below the poverty level. Educational levels have improved in recent years, but without job opportunities in local communities, people must leave to take advantage of their training. Any negative statewide economic impacts associated with or caused by the repository or repository-related nuclear waste transportation will have a disproportionate impact on such communities because of these depressed baseline conditions. The Draft EIS fails to address such impacts.

#### **Response**

Socioeconomic impacts of transportation would take place from construction and operation of branch rail lines and heavy-haul routes, including intermodal transfer stations. Section 6.1.2.7 of the EIS illustrates the number of construction and operations jobs that would be created from Nevada transportation alternatives. Because of the large population and workforce in the region of influence (principally in Clark, Nye, and Lincoln Counties), socioeconomic impacts from repository construction and operation would be small. During the construction phase and the operation and monitoring phase, the regional workforce would increase less than 0.5 percent above the baseline level (see Section 4.1.6). Changes to the baseline regional population would not be greater than 0.5 percent for the duration of the entire project.

In light of comments received on the Draft EIS concerning perception-based and stigma-related impacts, DOE examined relevant studies and literature on perceived risk and stigmatization of communities to determine whether the state of the science in predicting future behavior based on perceptions had advanced sufficiently since scoping to allow DOE to quantify the impact of public risk perception on economic development or property values in potentially affected communities. For the Final EIS, DOE also reevaluated conclusions of previous literature reviews, such as those conducted by the Nuclear Waste Technical Review Board and the State Nevada, among others. DOE has concluded that while in some instances risk perceptions could result in adverse impacts to portions of a local economy, there are no reliable methods whereby such impacts could be predicted with any degree of certainty; much of the uncertainty is irreducible and based on a qualitative analysis; adverse impacts from perceptions of risk would be unlikely or relatively small. As a consequence, DOE addressed but did not attempt to quantify any potential for impacts from risk perceptions or stigma in the Final EIS. (See Section 2.5.4 and Appendix N of the Final EIS for additional information.)

#### **7.5.11.2 (6150)**

##### **Comment** - EIS001654 / 0034

We respectfully disagree with the view of the Native American tribes that “the proposed repository and its facilities would further degrade the environmental setting.” The surface facilities will be used and removed at the end of the pre-closure period, as we understand it. The withdrawal of 230 square miles from use suggests that the land will be protected and risk to groundwater is minimized.

##### **Response**

Thank you for your comment.

#### **7.5.11.2 (6629)**

##### **Comment** - EIS001632 / 0069

Pages 3-68 through 3-70: This section discusses tribal historical and cultural beliefs but provides little information on how Native Americans think the proposed project may affect their cultural resources. Page 3-70 refers to a resource document prepared by the American Indian Writers Subgroup, but does not summarize the concerns therein or explain how to obtain a copy of the document.

##### **Response**

DOE has maintained a Native American Interaction Program with 16 tribes and one organization since the mid-1980s. Tribal representatives are named by their respective tribes to sit on a DOE-funded, self-organized committee called the Consolidated Group of Tribes and Organizations, whose charter is to present their respective tribal concerns and perspectives to the Department. The Group meets twice per year and participates in field trips to Yucca Mountain to impart cultural resource protection information and to become more aware of the studies being conducted. While the Group does not support the potential use of Yucca Mountain as a repository, they have agreed to be involved in an honest and participatory process. DOE will continue to support the Group and Native American Interaction Program while carrying out the mission of characterizing the Yucca Mountain site. The DOE also supported an American Indian Writers Subgroup process in the preparation of a report that provides Native American perspectives on the repository to be used in writing the EIS. The Native American Interaction Program is described in Section 3.1.6.2.1 of the EIS. The Native American view of the affected environment is described in Section 3.1.6.2.2 of the EIS and the impacts from the Proposed Action are discussed in Chapter 4 of the EIS. Section 4.1.5.2 of the EIS addresses the Native American viewpoint with regard as to how the proposed project would affect cultural resources in the Yucca Mountain area. Section 4.1.13.4 of the EIS discusses the Native American perspective regarding the proposed repository and the surrounding region. These beliefs have been documented in *American Indian Perspectives on the Yucca Mountain Site Characterization Project and the Repository Environmental Impact Statement* (DIRS 102043-AIWS 1998), which has been sent to the commenter.

#### **7.5.11.2 (6632)**

##### **Comment** - EIS001632 / 0070

We also note that while Appendix D indicates that the draft EIS was distributed to the Department of the Interior’s Office of Environmental Policy and Compliance (Dr. Willie R. Taylor), it does not appear that a copy was sent directly to the Bureau of Indian Affairs (BIA). We recommend that the Department of Energy provide the BIA with a copy of the final EIS.

**Response**

The Department of the Interior's expressed policy is that its bureaus receive National Environmental Policy Act documents through a coordinated distribution from its Office of Environmental Policy and Compliance. In addition, DOE will send a copy of the Final EIS directly to the Bureau of Indian Affairs as recommended.

**7.5.11.2 (6745)**

**Comment** - EIS001377 / 0008

Cultural Resources - S.4.1.6:

Discussion of your Draft:

The Draft EIS includes only three paragraphs summarizing the longstanding residential and nomadic presence, and continuing stewardship, of the indigenous peoples in the Yucca Mountain region.

The (patronizing) language used in the Draft, "...DOE recognizes that Native Americans have concerns about protecting traditions and the spiritual integrity of the land in the Yucca Mountain region, and that these concerns extend to the propriety of the Proposed Action...", coupled with the way in which the Draft EIS speedily dispatches the question of Land Ownership, reveals that the DOE disproportionately weighs the views of the indigenous residents compared against the dominant economic and political pressures which shape a preselected outcome which in turn shapes the EIS as a tool towards those ends despite fundamental questions about land ownership, stewardship, environmental justice and the desecration of cultural resources, not to mention the incomplete range of scientific studies on which the site characterization and DOE Proposed Action are based.

Action Required-Cultural Resources:

1. The wealth of cultural resources, the persistent presence of the Indigenous Peoples at and around Yucca Mountain, and the Ruby Valley Treaty confirm true title and stewardship of the land. The revised EIS must include an Alternative Proposed Action which includes clean-up of the entire Nellis Air Force range by DOE and repatriation of the land and cultural resource to the Indigenous People of the region.
2. The revised EIS should respect and protect the primacy of the traditional uses of this land by the Indigenous inhabitants of the area and the cultural resources they have left with equal standing as compared to existing churches, temples, graves and sacred sites belonging to non-Native Peoples and religious traditions.

**Response**

Congress amended the NWSA in 1987, directing the Secretary of Energy to perform site characterization activities only at the Yucca Mountain site as a potential location for a geologic repository. This set forth a process for the Federal Government to make a determination whether to recommend that the President approve the Yucca Mountain site for development of a repository. Therefore, the scope of the EIS is limited to informing the Secretary's decision whether to recommend to the President an action to construct, operate and monitor, and eventually close a geologic repository for disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain. DOE supported the preparation by Native Americans of a perspectives document the Department could use as a reference for the EIS (DIRS 102043-AIWS 1998). A number of sections in the EIS summarize information from that document. For more than 10 years the DOE Yucca Mountain Project has had a Native American Interaction Program with 16 tribes and one organization. That program has documented Native American concerns and issues associated with the Proposed Action, and has provided a cultural resources monitoring effort at Yucca Mountain by Native Americans. DOE respects the Native American point of view with regard to their culture and the environment as a whole.

Section 3.1.1.4 of the EIS discusses the Ruby Valley Treaty. DOE is aware that the Western Shoshone tribe maintains that Yucca Mountain is on Western Shoshone land. Although DOE recognizes the sensitivity of this issue, it believes that the 1985 Supreme Court case *United States v. Dann*, 470 U. S. 39 (1985), settles these issues. This decision ruled that payment for the land has been made in accordance with the Indian Claims Commission Act of 1946 and that payment constitutes a final settlement. The United States has met its obligations with the Indian Claim Commission's final award, and as a consequence, the aboriginal title of the land has been extinguished. The land that DOE is considering for development of a repository at Yucca Mountain is legally under the ownership and control of the Federal Government.

**7.5.11.2 (7024)****Comment** - EIS001522 / 0020

DOE bias in the Yucca Mountain study (DEIS, 1999, 7-53) is apparent, for example, in its treatment of environmental-justice issues. On the one hand, throughout the document, whenever it discussed environmental-justice questions likely arising in the event of building the proposed Yucca Mountain facility, the DOE authors simply stated the Native-American point of view opposing Yucca Mountain, and then, without any evidence or discussion, asserted that there would be no disproportionate environmental impacts (see earlier section on environmental justice in this paper) and no significant impact from the repository at all (DEIS, 1999, 5-49). The DOE made both assertions, despite the fact that nuclear waste transport would cut across Native American lands, and despite the fact that the site of the proposed repository is on land sacred to the Shoshone and Paiute, as well as contested in a land treaty between the U.S. and the Native Americans. The DOE completely ignored the land claims, the sacredness of the land to the Native Americans, and the fact that many reservations are located near the proposed Yucca Mountain facility. Instead the DOE proclaimed, by fiat, that there would be no environmental justice impacts as a result of the proposed repository. This denial is all the more amazing because there is no analysis, whatsoever, of the Native American claims in opposition to the Yucca Mountain facility. On the other hand, when the DOE treats proposed impacts of leaving the nuclear waste onsite, at reactors across the U.S., instead of moving forward on the Yucca Mountain project, its bias is evident. Although this (no-action) alternative is more preferable to the Native American community and to potential victims of environmental injustice, the DOE claims that this no-action option could cause environmental-justice problems. It states:

“... the increased number of facilities required to store the ... inventory could adversely affect the nearby public to a degree greater than that for the Proposed Action inventory [siting Yucca Mountain]. As with the Proposed Action inventory, nearby minority or economically disadvantaged communities could experience disproportionately high and adverse human health impacts. In addition financial considerations could make it more difficult for members of minority or low-income populations to obtain uncontaminated resources or to move away from contaminated soils and water. Because subsistence patterns vary for minority or low-income populations, members of these populations could be exposed to greater than average doses. The result of differing potentials for exposure could result in disproportionately high and adverse impacts on minority or low-income populations” (DEIS, 199, 7-53).

The DOE affirmation of environmental-justice problems associated with not building the Yucca Mountain Repository is amazing, given (1) that DOE did not analyze the environmental-justice arguments of the Native Americans who wrote opposing the Yucca Mountain facility (see, for example, DEIS, 1999, 4-8, 5-49, 8-58, 10-4), and given (2) that DOE claimed there were no environmental-justice impacts in the case of building the Yucca Mountain facility. This unargued DOE denial of environmental justice problems, where Native Americans say they exist (if the repository were built), together with the assertion of environmental justice problems, where Native Americans say they do not exist (if the repository were not built), is puzzling. The DOE affirmation of environmental-justice problems that would arise if the waste remained where it is, throughout the country, is especially problematic because of three DOE omissions in its short five-sentence “analysis” of environmental justice in the no-action case. In this analysis, DOE alleged that not building Yucca Mountain likely would cause environmental injustices, but it failed to note that, in this case, (1) the people receiving the benefits from the nuclear electricity would also bear the risks of the waste, which would not be the case if Yucca Mountain were built. The DOE also failed to take account of the fact that (2) the Nuclear Regulatory Commission affirmed that the waste could stay safely onsite, where it is, for at least 100 years and that (3) all things being equal, waste disposal is more equitable the more widely it is dispersed, as it would be in the no-action case. Given its failure to examine these three points, all of which suggest that the no-action option is more environmentally just than the Yucca Mountain option, the DOE again appears to be begging the question and thus revealing its biases.

**Response**

As required by Executive Order 12898, DOE performs environmental justice analyses to identify and address, as appropriate, the potential for its actions to cause disproportionately high and adverse impacts to minority or low-income populations. The goal of this approach is to identify whether any high and adverse impacts would fall disproportionately on minority and low-income populations. The approach first analyzes the potential impacts on the general population as a basis for comparison. Second, based on available information, the approach assesses whether there are unique exposure pathways, sensitivities, or cultural practices that would result in high and adverse impacts on minority or low-income populations. If such potential impacts would be high and adverse, the approach

then compares the impacts on minority and low-income populations to those on the general population to determine whether any high and adverse impacts fall disproportionately on minority and low-income populations.

In response to comments, DOE has updated and refined information germane to its environmental justice analysis. For example, the EIS now includes additional and more detailed mapping of minority populations, and additional mapping and information that describes the proximity of tribal lands and cultural and ceremonial areas to rail corridors in Nevada. Based on the additional information and resulting analysis, DOE has concluded that disproportionately high and adverse impacts from the construction and operation of a branch rail line or intermodal transfer facility would be unlikely. DOE also has estimated the potential health impacts from a subsistence diet based primarily on game taken from lands near the repository exclusion areas and concluded that high and adverse impacts would be unlikely.

DOE believes that it appropriately considered Native American viewpoints by relying on the results of its long-term and ongoing interactions with Native American tribes, and by emphasizing the identification of potential impacts to historic and other cultural resources important to sustaining and preserving their cultures.

DOE supported the preparation of a reference document written by Native Americans (DIRS 102043-AIWS 1998). The AIWS document presents a Native American point of view with regard to the potential siting of a repository at Yucca Mountain. Based on the results of the report and these interactions, DOE acknowledges in the EIS that people from many Native American tribes have used the area proposed for the repository as well as nearby lands; that the lands around the site contain cultural, animal, and plant resources important to those tribes; and that the implementation of the Proposed Action would continue restrictions on access to the area around the repository site (see Section 4.1.13.4 of the EIS). Furthermore, the presence of a repository would represent an intrusion into what Native Americans consider an important cultural and spiritual area. In contrast, however, DOE and the Consolidated Group of Tribes and Organizations recognize that restrictions on public access to the area have been generally beneficial and protective of cultural resources.

DOE recognizes that a repository could not be undertaken at Yucca Mountain without impairment to the viewpoint expressed in the document, but believes that the steps it has taken or planned, including regular interactions with representatives of tribes in the region and measures to protect cultural resources, would lessen the potential for detriment to the viewpoint the document expresses. DOE has modified corresponding language in Section 4.1.13 of the EIS. The environmental justice analysis in the EIS is considered adequate and appropriate to address the requirements of Executive Order 12898.

With respect to comment that DOE is ignoring land claims and that the land is sacred to the Shoshone and Paiute, the DOE acknowledges that there are strong opinions and passionate beliefs with regard to the “Ruby Valley Treaty” and related Native American-defined environmental justice issues (see Section 3.1.1.4 of the EIS). It is understood that the Yucca Mountain area is considered sacred to the Western Shoshone, as are all environmental resources on earth. Through the Native American Interaction Program (which includes Western Shoshone representation), the DOE has heard the holistic, integrated beliefs of Native American groups regarding the land, water, air, plants and animals.

A 1985 U.S. Supreme Court decision [United States v. Dann, 470 U.S. 39 (1985)] held that the Western Shoshone claim to land associated with the Ruby Valley Treaty has been extinguished, and that fair compensation has been made. Although the Western Shoshone people dispute the 1977 findings of the Indian Claims Commission and have not accepted the monetary award for the lands in question, DOE believes that the Supreme Court case U. S. v. Dann settles these issues. DOE is aware that among the Native American community, there is significant disagreement with the Court rulings.

The commenter also refers to a discussion of environmental justice impacts of the No-Action alternative.

DOE analyzed the No-Action Alternative to serve as a basis for comparing the magnitude of environmental impacts of the Proposed Action. Under the No-Action Alternative, and consistent with the Nuclear Waste Policy Act, DOE would terminate activities at Yucca Mountain and undertake site reclamation to mitigate any significant adverse environmental impacts. In addition, DOE would prepare a report to Congress, with its recommendations for further action to ensure the safe, permanent disposal of spent nuclear fuel and high-level radioactive waste, including the

need for new legislative authority. Under any future course that would include continued storage commercial utilities and DOE would continue managing spent nuclear fuel and high-level radioactive waste in a manner that protected public health and safety and the environment. However, the future course that Congress, DOE, and the commercial utilities would take if Yucca Mountain was not approved is uncertain.

In light of these uncertainties, DOE decided to illustrate potential future consequences by focusing the analysis of the No-Action Alternative on the impacts of two scenarios – long-term storage of spent nuclear fuel and high-level radioactive waste at the current sites with effective institutional control for at least 10,000 years, and long-term storage with no effective institutional control after about 100 years. The continued storage scenarios analyzed in the EIS, although reasonable for analytical purposes, do not necessarily represent a likely action. The analyses include consideration of impacts that might occur with respect to minority and low-income communities and DOE believes they provide sufficient information to support current decisionmaking.

**7.5.11.2 (7475)**

**Comment** - EIS001912 / 0039

Section 3.1.1.4 Since this is not an issue why include it in Chapter 3?

**Response**

The Western Shoshone people maintain that the Ruby Valley Treaty of 1863 gives them rights to certain lands, including the Yucca Mountain region. Chapter 3 of the EIS discusses this land because it is part of the affected environment that could be impacted by the Proposed Action.

**7.5.11.2 (8285)**

**Comment** - EIS000817 / 0103

P. 4-85 4.1.13.4, last paragraph -- You mean you will “listen” to their arguments and then go ahead and do what you want. There is no real consideration of Native Americans here that I see.

**Response**

DOE understands that the Native American view is contrary to the siting of the proposed Yucca Mountain Repository and that all of mother earth holds sacred, spiritual, cultural, and historical value. DOE actively seeks input from and documents these views as part of the ongoing Native American Interaction Program, which consists of Western Shoshone, Southern Paiute, and Owens Valley Paiute/Shoshone representatives.

**7.5.11.2 (8750)**

**Comment** - EIS001816 / 0014

Given the estimated total number of curies in southern Nevada from federal programs in the year 2050 as requested above [comment 12], this amount of radioactive source term material unfairly burdens the Western Shoshone, Southern Paiute, and other native peoples with an additional, socio-spiritual burden to the extent that it will require mitigation (treatment for depression and religious imbalance) of some type. The DEIS must analyze and describe how it will mitigate this impact.

**Response**

Based on comments received on the Draft EIS concerning this subject, DOE examined relevant literature and the state of research into perception-based and stigma-related impacts that could arise from the construction and operation of a repository. DOE examined the independent reviews conducted by the Nuclear Waste Technical Review Board and the State of Nevada, among others, and identified and assessed relevant published studies and literature to determine whether the state of science in predicting future behavior based on perceptions had sufficiently advanced since scoping to allow DOE to quantify the impact of public risk perception on economic development or property values in potentially affected communities. DOE concluded that stigmatization of southern Nevada can be envisioned under some scenarios, but it is not inevitable or numerically predictable. Any such stigmatization would likely be an aftereffect of unpredictable future events, such as a serious accident, which might not occur. As a consequence, DOE addressed but did not attempt to quantify potential for impacts from risk perceptions or stigma in the Final EIS. See Section 2.5.4 and Appendix N of the EIS for additional information.



**7.5.11.2 (8903)**

**Comment** - EIS000869 / 0031

S.9, Unavoidable Adverse Impacts, lists multiple reasons that the repository should not be built at the Yucca Mountain site, not the least of which are the Native American tribes affected. The Paiute, Moapa, and Western Shoshone Native American people deserve a weighted opinion in this matter. This is native land that has been in the care and custody of these people for many generations, often after being forced out of their native lands.

S.11.2. Areas of Controversy, the Native American issues of the interrelation of plants, animals, air, land, and water are currently termed ecosystems and ecology and must be addressed satisfactorily. This draft Environmental Impact Statement Summary does not. Regarding the Native American tribes in the region, especially the Western Shoshone's claim to title to the land, artifacts, and holy areas, these issues must be considered and resolved satisfactorily.

**Response**

DOE understands that the Yucca Mountain area and all environmental resources on earth are considered sacred to the Western Shoshone. A 1985 U. S. Supreme Court decision [United States v. Dann, 470 U. S. 39 (1985)] held that the Western Shoshone claim to land associated with the Ruby Valley Treaty has been extinguished. DOE recognizes that Native American tribal governments have a special and unique legal and political relationship with the Government of the United States, as established by treaty, statute, legal precedent, and the U. S. Constitution. DOE has maintained a Native American Interaction Program with 16 tribes and one organization since 1987 to consult and interact with them on the characterization of the Yucca Mountain site. Tribal representatives are named by their respective tribes to sit on a DOE-funded, self-organized committee called the Consolidated Group of Tribes and Organizations, whose charter has been to inform the DOE of the holistic, integrated beliefs of Native Americans regarding the land, water, air, plants, and animals. Paiute (including Moapa) and Western Shoshone tribes have representation in the Group. The Group meets twice per year and participates in field trips to Yucca Mountain to impart cultural resource protection information and to become more aware of the studies being conducted. While the Group does not support the use of Yucca Mountain as a repository, they have agreed to be involved in an honest and participatory process. DOE will continue to support the Consolidated Group of Tribes and Organizations and Native American program while carrying out the mission of characterizing the Yucca Mountain site.

**7.5.11.2 (9088)**

**Comment** - EIS001463 / 0001

I'd like to look at the audience instead of looking at this desk here and people over here. You are the people I'd like to talk to. You are the people that I'm concerned about. Because since 1953, since we started to develop a nuclear weapon, my people have suffered at the hands of Nuclear Energy Department. Many, many of my people have suffered, and they're gone. Many and many of your people have suffered and gone.

Today it seems to me like we're not concerned with our younger future generation, as we call them. Future generation is the one that's going to be behind us following our footsteps. If we don't protect their rights today and tomorrow, how they going to survive? When we already begin to see all the living things begin to disappear from the face of the earth.

This is something that we all have to think about. Not only us, but people in congress have to think about it. The DOE people have to think about it. All the government employees that gets thousands of dollars a month have to think about it.

That dollar today, it reads right on there, "In God we trust," it says. Is this what we're following? Is this what will save our life? Is this what's going to save the younger generation's life? I really don't think so. Because I've seen so many of my people disappear from the face of the earth. They went underground, no life. Some of my peoples have suffered and died. I've seen many, many of your people have suffered and died, not only here in United States, but around the world.

Today we see so many stuff, so many life deformed coming from the earth caused by radiation. If hope we can think about it. I hope that we can see it, ask questions about it, learn from each other. I think it's very important for all of us. Let's not put it under the rug. Let's not say somebody else is going to fix it for us. I think we are the one.

We are the one who's going to do something for the future generation. My concern is always about life, because I survived, my people for thousand years have survived on this land of ours. We are the people, keeper of this land. We should keep it clean so all the living things can enjoy their life. If they enjoy their life, they'll appreciate us standing up for them. If we don't stand up for our future generation, who is going to stand up for their life? Because we seen so much today and everybody around the world is talking about the nuclear waste today.

Remember, if anything ever happens near you within 450-mile radius, you are in trouble. Some of us might be lucky enough to survive, but I have seen so many lose their life under the hands of Nuclear Energy Department.

I know I've talked to many, many people at the Nevada Test Site, for one. They always tell me from the beginning that I'm taking bread and butter out of their mouth, but the same people come back a few years later and say, hey, you should have talked a little bit louder; my brother, my mother and my sister, so forth would have been alive. Today some of you people that work for the DOE today are going to be saying the same thing. The mutiny that I heard before throughout the world, everybody's concerned about it.

I don't know how many people here in Salt Lake City are drinking clear water, strong water. I see so much containers of water in plastic containers in stores, so you must be buying them. So somebody's making money off our mother, not giving nothing back, taking advantage of what's put here for us to use. We should be doing those things, but we're not, for some reason. Because account of that dollar, I guess. When it says "In God we trust," we follow that. That's not what will save our life, it's not what will save the life of the younger generation.

All the living things today are disappearing. Some places what my people survive on, the plant life, herb life, fish life, animal life, they're beginning to disappear. I wish we can unite ourself together and talk about those things, think about the younger generation. Moving nuclear waste around the country is not going to rule the world. All it's going to rule is make more trouble for us, all of us. We already see that. I don't care whether we're for it today, maybe we'll be against it tomorrow. I hope you people think about it.

#### **Response**

The Environmental Protection Agency has issued final *Public Health and Environmental Radiation Protection Standards for Yucca Mountain, Nevada* (40 CFR Part 197), to protect the health and safety of surrounding populations, and the project has demonstrated that it can comply with these standards. See Section 5.10 of the EIS for more information.

#### **7.5.11.2 (9739)**

**Comment** - EIS001888 / 0323

[Clark County summary of comments it has received from the public.]

Comments relating to cultural and historical resources, for example, urge DOE to be very serious about their handling of Native American issues. The DEIS however, makes little mention of Native American issues other than to say that there are some issues that won't be addressed.

#### **Response**

DOE takes Native American issues seriously and strives to document Native American input in the appropriate forums. Since the late 1980s the Department has maintained a Native American Interaction Program with 16 tribes and one organization from Nevada, California, Arizona, and Utah as described in Section 3.1.6.2.1 of the EIS. This program concentrates on the protection of cultural resources at Yucca Mountain and promotes a government-to-government relationship with the tribes and organizations. DOE also supported the preparation of *American Indian Perspectives on the Yucca Mountain Site Characterization Project and the Repository Environmental Impact Statement* (DIRS 102043-AIWS 1998) by the American Indian Writers Subgroup for use as a primary reference in the EIS. That report presents the Native American point of view, which the EIS summarizes. DOE has considered Native American issues associated with the repository program in the decisionmaking process.

**7.5.11.2 (9744)**

**Comment** - EIS001888 / 0327

[Clark County summary of comments it has received from the public.]

Commenters stated that the EIS should acknowledge and assess the differences between Western civilization and Native Americans in terms of their relationship to nature; Native American ties to the land (cannot relocate because of contamination); and cultural implications in the aftermath of a radiological accident.

**Response**

DOE has maintained long-term and ongoing interactions with Native American tribes regarding Yucca Mountain. DOE initiated its Native American Interaction Program in 1987 to consult and interact with tribes and organizations on the characterization of the Yucca Mountain site and the possible construction and operation of a repository. Representatives named by the tribes sit on a DOE-funded, self-organized committee called the Consolidated Group of Tribes and Organizations which meets twice a year and participates in field trips to Yucca Mountain to impart cultural resource protection information and to become more aware of the DOE studies. While the group does not support the use of Yucca Mountain as a repository, it has agreed to be involved in an honest and participatory process. DOE would continue to support both of these programs.

During the preparation of the EIS, DOE interacted with Native American tribes on a range of topics of interest to assess their viewpoints and perspectives. In addition, DOE supported the preparation of a resource document entitled, *American Indian Perspectives on the Yucca Mountain Site Characterization Project and the Repository Environmental Impact Statement* (DIRS 102043-AIWS 1998), written by the American Indian Writers Subgroup of the Consolidated Group of Tribes and Organizations that was used in the preparation of the EIS. This report documents the Native American point of view on cultural resources management, the “holistic” view of the environment and sacredness of the land, Native American views of environmental justice, and the potential siting of a repository at Yucca Mountain. DOE recognizes that construction of a repository at Yucca Mountain would represent an intrusion into what Native Americans consider an important cultural and spiritual area. In contrast, however, DOE and the Consolidated Group of Tribes and Organizations recognize that restrictions on public access to the area have been generally beneficial and protective of cultural resources.

**7.5.11.2 (9745)**

**Comment** - EIS001888 / 0329

[Clark County summary of comments it has received from the public.]

Commenters called for the EIS to act as a forum to enable DOE to live up to its commitments to treat Native American Tribes in a government-to-government manner, noting that the EIS must assess impacts on tribal trust resources, and assure that tribal government rights and concerns are considered. As part of this forum, Commenters noted that the EIS should: evaluate the attitudes and options of Native American people toward the repository program, the DOE management of the program and other relevant activities; confer with Native Americans to protect sacred burial sites pursuant to existing law; identify natural resources of value to Native Americans and provide a means to avoid any impacts; consider that the site is within the ancestral territory of the Western Shoshone Tribe, and consult with the Tribe to address issues of minimization, degradation, and devastation; and evaluate Western Shoshone land claims relative to DOE rights-of-way acquisition, location of burial sites, ceremonial sites, and other site-specific cultural resources within rail corridors.

**Response**

DOE believes that it has lived up to its commitments to treat Native American Tribes in a government-to-government manner. DOE initiated its Native American Interaction Program in 1987 to consult and interact with tribes and organizations on the characterization of the Yucca Mountain site, and possible construction and operation of a repository. DOE also interacts cooperatively with the Consolidated Group of Tribes and Organizations, which consists of officially appointed tribal representatives responsible for presenting their tribal concerns and perspectives to the Department.

During preparation of the EIS, DOE interacted with Native American tribes on a range of topics of interest to assess their viewpoints and perspectives as documented in Section 4.1.13.4 of the EIS. DOE also supported the American Indians Writers Subgroup of the Consolidated Group of Tribes and Organizations in its preparation of *American*

*Indian Perspectives on the Yucca Mountain Site Characterization Project and the Repository Environmental Impact Statement* (DIRS 102043-AIWS 1998) which was used as a reference in preparing the EIS.

DOE acknowledges in the EIS that people from many Native American tribes have used the area proposed for the repository as well as nearby lands; that the lands around the site contain cultural, animal, and plant resources important to those tribes; and that the implementation of the Proposed Action would continue restrictions on free access to the repository site environs. DOE and the Consolidated Group of Tribes and Organizations recognize that restrictions on public access to the area have been generally beneficial and protective of cultural resources; however, the presence of a repository would represent an intrusion into what Native Americans consider an important cultural and spiritual area. The implementation of the Proposed Action would continue restrictions on access to the site as discussed in Section 4.1.13.4 of the EIS.

*The Programmatic Agreement Between the United States Department of Energy and the Advisory Council on Historic Preservation for the Nuclear Waste Deep Geologic Repository Program, Yucca Mountain, Nevada* contains the requirements and general procedures for mitigation of adverse effects at important archaeological and historic sites in the Yucca Mountain region. DOE also prepared the *Research Design and Data Recovery Plan for the Yucca Mountain Project* (DIRS 103196-DOE 1990) which outlines more detailed approaches and procedures for implementing the mitigation of archaeological sites. It provides specific guidelines for determining the rationale, methods, analytical requirements, and logistics for archaeological measures at Yucca Mountain. DOE has also implemented worker education programs on the protection of cultural resources to limit direct impact to cultural resources.

DOE understands that the Yucca Mountain site is within the ancestral territory of the Western Shoshone and the Southern Paiute and that the Western Shoshone people maintain that the Ruby Valley Treaty of 1863 gives them rights to certain lands; including the Yucca Mountain region. Although DOE recognizes the sensitivity of this issue, a 1985 Supreme Court decision in *United States v. Dann*, 470 U. S. 39 (1985) held that payment for the land has been made and that payment constitutes a final settlement. DOE believes that the Supreme Court case settles these issues.

If the Yucca Mountain site was approved, DOE would issue at some future date, a Record of Decision to select a mode of transportation. If, for example, mostly rail was selected (both nationally and in Nevada), DOE would identify a preference for one of the rail corridors in consultation with affected stakeholders, particularly the State of Nevada. In this example, DOE would announce a preferred corridor in the *Federal Register* and other media. No sooner than 30 days after the announcement of a preference, DOE would publish its selection of a rail corridor in a Record of Decision. A similar process would occur in the event that DOE selected heavy-haul truck as its mode of transportation in Nevada. Other transportation decisions, such as the selection of a specific rail alignment within a corridor, would require additional field surveys, State and local government and Native American tribal consultations, environmental and engineering analyses, and appropriate National Environmental Policy Act reviews.

#### **7.5.11.2 (9961)**

##### **Comment** - EIS002255 / 0001

I am here to speak for those that can't speak, and I am here to speak for the water, for the plants, for all the creatures in the ocean and the rivers and all the life in all places that don't have the voice that we have. But they have life; they have feelings; and they have a right to all of that. Because without all of that life, we wouldn't be here. It's all connected.

I feel shame standing here. I feel shame that we have to submit ourselves once again to this kind of harassment, once again, you know, by these people that know what's better for us. Once again, you know, we stand here, and we are asking that life go on.

I just want to leave you with the thought that whatever we do today affects the life right now and onward. And my ancestors are looking out at you through my eyes, and there's such a thing as karma, and we will see where that goes.

**Response**

DOE appreciates that Native Americans hold a unique knowledge and view of the land. DOE believes that it appropriately considered Native American viewpoints by incorporating into the EIS potential impacts to historic and other cultural resources identified by Native Americans as important to sustaining and preserving their cultures. Congress made the decision to focus on the Yucca Mountain site for a geologic repository when it amended the Nuclear Waste Policy Act of 1982.

**7.5.11.2 (10271)**

**Comment** - EIS002097 / 0005

Each and every one of us, I don't care where you come from, we're on this one earth together. We're drinking that same water everybody drinks, everyone drinks. I don't care what it is. Even the mosquito drinks water. Those are the things that we're going to have to protect. The life that was put here by the nature, we cannot walk away from it. We're going to have to change the direction. Our scientists are going to have to come up with a cleaner power, a cleaner water. Ain't no way that we're going to stop this water from flowing underneath us. It's already happening throughout the world.

Let's do something together. Let's talk to one another. Let's not go agin' each other and say, "I know better than you do," and I say there for you people. You don't know too much about this earth at all. Now you coming back to me and asking me what kind of herb can I use to heal myself? The native people know that. They lived here for millions of years, but we're not going to tell you unless if you want to begin it.

I see so many of you people that work at the Nevada Test Site told me I'm taking the bread and butter out of their mouth. The same people come back to me "Why didn't you holler a little bit louder? My aunt would have been alive, my brother would have been alive if you spell it out." So this is what we're all up against. Let's do something about it. Let's work together, be good neighbors to one another.

**Response**

Thank you for your comment. Congress directed DOE to evaluate a repository at Yucca Mountain to help solve an existing environmental problem that affects most states in the country. The program is based on sound science and complies with public health and safety and environmental regulatory requirements. DOE will continue to document and discuss Native American issues and concerns through the Native American Interaction Program.

**7.5.11.2 (10290)**

**Comment** - EIS002202 / 0001

So we as a native people lived here for many years. We don't appreciate the Nuclear Energy Department putting this nuclear waste into Yucca Mountain. That mountain we cared for, we lived there for many, many years. We roamed through that part of the country.

Today the Nuclear Energy Department began to find our remains there, but not telling us that they were there million years ago. But they're telling us to move it and do away with it. I would tell that Nuclear Energy Department they should do the same thing with their cemetery. Move theirs, not to leave it where it's at because we as a people at one time, we leave the animal life, we leave their remains where it's at. Same with our people. So they're put there. That's their resting place, and today throughout the country, ladies and gentlemen, you are the one that's going to be affected. Maybe not today, maybe tomorrow.

**Response**

Approximately 1,000 cultural resource sites have been recorded in the Yucca Mountain area. Sites may consist of a few lithic fragments, one projectile point, or a rock shelter with enclosed artifacts. No human remains have ever been recorded at the Yucca Mountain site. The commenter may be confusing the DOE's Yucca Mountain site with the larger Nevada Test Site nearby. Congress did not authorize DOE to evaluate any sites other than Yucca Mountain.

**7.5.11.2 (11462)**

**Comment** - EIS002255 / 0002

There's a lot of money sitting in this room. Many of us got up real early this morning; we drove hundreds of miles to be here. We don't have budgets other than what we have of our own. We don't have, you know, the -- we don't

have somebody flying us in, you know, renting a car for us, bringing us here, putting us up in luxury. But we are here because it's important, because we are taught that the generations that are yet to come depend on us. Just as seven generations before, I know that my people saw what was going on, and they started to pray harder than ever, and this generation today has the same responsibility to the life.

**Response**

DOE appreciates the commenter's valuable input to the program. DOE believes that it appropriately considered Native American viewpoints by incorporating into the EIS potential impacts to historic and other cultural resources identified by Native Americans as important to sustaining and preserving their cultures.

**7.5.11.2 (11529)**

**Comment** - EIS002252 / 0013

I believe that the native people have a wisdom about what happens in this area. They have been here longer than anybody else. They know this area. They know the land; they know the water; and they have a better understanding of what's going to happen over the next 10,000 years than our white scientists.

**Response**

DOE appreciates that Native Americans hold a unique knowledge and view of the land. DOE believes that it appropriately considered Native American viewpoints by incorporating into the EIS potential impacts to historic and other cultural resources identified by Native Americans as important to sustaining and preserving their cultures. DOE has maintained long-term and ongoing interactions with Native American tribes regarding Yucca Mountain. DOE initiated its Native American Interaction Program in 1987 to consult and interact with tribes and organizations on the characterization of the Yucca Mountain site, and the possible construction and operation of a repository. DOE also interacts cooperatively with the Consolidated Group of Tribes and Organizations, which consists of officially appointed tribal representatives responsible for presenting their tribal concerns and perspectives to the Department.

**7.5.11.2 (11724)**

**Comment** - EIS002271 / 0001

Has the Department of Energy established the number of tribal governments affected by the proposed Yucca Mountain site? 2: How many tribal governments have participated in an advisory capacity? 3: How many tribal governments oppose or approve of the proposed Yucca Mountain Repository? 4: How many tribal governments have been recognized as an Affected Unit of Local Government? 5: How many tribal governments has the Department of Energy established Memorandums of Understandings with regarding all future projected impacts resulting from the Yucca Mountain site being approved or disapproved?

My comment is the transportation of nuclear waste by the Department of Energy to the proposed Yucca Mountain repository has and will continue to have a detrimental effect on our ever increasing concern for those governments.

To address these concerns, tribal governments must be recognized and treated as Affected Units of Government separate from state and county government bodies. Such a designation would recognize the sovereign right of the tribes to self-determination and government and enhance the government-to-government relationship between the tribes and our federal government.

Tribal governments would require that with that recognition, which has been established through treaty, federal support from the Department of Energy in the form of funding and appropriations go directly to the Affected Units of Tribal Governments and would enable the tribes to participate in a meaningful way rather than as a lesser entity represented by some other authority, such as a state or county government. Recognition as Affected Units of Tribal Government would entail greater tribal interaction with agencies, such as the Federal Nuclear Waste Council Advisory Boards and related departments, while ensuring an effective tribal voice relative to the nuclear waste concerns regarding the proposed Yucca Mountain Repository.

At the present time I do not believe such recognition exists in the minds of the decision makers or the decision-making process of the DOE. Ethnocentric attitudes are alive and well within these councils, committees, and departments.

If the DOE and the Advisory Council on Nuclear Waste [ACNW] hears the tribal government voice, is it recognized as legitimate and, in truth, is it acted upon? It is my determination the tribal voice is heard, but not taken seriously. They are simply patronized or put up with.

My determination is that the DOE or ACNW does not address tribal concerns comes from over 200 years of broken treaties, 200 years of a lack of recognition, and over 200 years of a lack of representation on all levels of government. Recognition must be given to each individual tribal government within Inyo County and beyond, thereby reflecting the individual nature and right to self-government of each tribe.

Such recognition of self-determination reflects to all Affected Units of Tribal Government along proposed transportation routes, regardless of what state each tribe may be located within.

Effective and workable Memorandums of Understanding must be established with each tribal government creating beneficial relationships between them. Such MOU's must be adopted and implemented at the earliest possible stages of the proposed repository EIS and should have been in place many years prior to this time.

#### **Response**

As defined by the NHPA, affected units of local government are local governments (counties) with jurisdiction over the site of a repository. DOE Order 1230.2 recognizes that Native American tribal governments have a special and unique legal and political relationship with the Government of the United States, as defined by history, treaties, statutes, court decisions, and the U. S. Constitution.

For more than 10 years DOE has sponsored a Native American Interaction Program with representatives of 15 Federally recognized tribes, 1 nonrecognized tribe, and 1 organization. Those representatives have operated in an advisory capacity to DOE on a variety of issues associated with the Yucca Mountain Project. DOE also interacts cooperatively with the Consolidated Group of Tribes and Organizations, which consists of officially appointed tribal representatives responsible for presenting their tribal concerns and perspectives to the Department. During the preparation of the EIS, DOE interacted with Native American tribes on a range of topics of interest to assess their viewpoints and perspectives.

DOE has not negotiated Memoranda of Understanding with tribal governments regarding the repository program at Yucca Mountain. Although the EIS identifies rail transportation as the preferred option, the Department has not determined specific routes. If the Yucca Mountain site receives approval, DOE would implement the requirements of Section 180(c) of the NHPA, which requires it to provide technical and financial assistance to states to train public safety officials of appropriate units of local government and Native American tribes through whose jurisdictions it would transport spent nuclear fuel or high-level radioactive waste. In addition, DOE would conduct National Environmental Policy Act analyses to address potential impacts to Native American lands and culture.

#### **7.5.11.2 (11827)**

##### **Comment** - 010170 / 0009

Disturbing Native American Cultural Resource sites (Section 3.1.5) is unacceptable. The Supplement notes that additional facilities it proposes, such as the aboveground storage facility, and the solar generating array, could impact highly significant archaeological sites. It notes that over 25,000 artifacts were already disturbed in one area alone. The Yucca Mountain area is not a long abandoned series of archaeological sites, but a place where Western Shoshone continue to gather for active spiritual ceremony.

#### **Response**

A 1985 U.S. Supreme Court decision [United States v. Dann 470 U.S. 39 (1985)] held that the Western Shoshone claim to land associated with the Ruby Valley Treaty has been extinguished, and that fair compensation has been made.

Actions that DOE would take to mitigate adverse impacts to cultural resources at Yucca Mountain include those required by law or regulation and those that DOE determined the project would include to reduce such impacts. The *Research Design and Data Recovery Plan for the Yucca Mountain Project* (DIRS 103196-DOE 1990) outlines procedures for implementing the mitigation of impacts to archaeological sites and provides specific guidelines for determining the rationale, methods, analytical requirements, and logistics for archaeological mitigation measures at

Yucca Mountain. In addition, the Department would interact with Native American tribes and organizations to ensure that repository activities avoided or minimized adverse impacts to resources or places that are important to Native Americans.

**7.5.11.2 (12425)**

**Comment** - EIS001948 / 0001

I am Western Shoshone and have residence in Elko, Nevada, in Elko County. My Newe/Newah/Nemah relatives are affected by the effects of radiation.

Western Shoshone People have continuously subsisted off the territory within which is located Yucca Mountain Repository. Since time immemorial they hunted, gathered and fished unobstructed within their aboriginal territory, until the coming of the Europeans.

The States United of North America in efforts to provide safe passage to their immigrant/citizens entered into the Ruby Mountain Treaty of 1863. During that part of the century our Shoshone upheld this as law of the land even though they suffered many hardships-including hunger and death through encounters with the travelers and the loss of native foods.

Historically, our people wintered in the area directly situated in and on Yucca Mountain. Radiation has destroyed human, animal and plant life and is against the dignity of the native inhabitants of the area, not to mention, those who the descendants of the earliest immigrants to this continent.

Since the late forty's our people saw a different type of hardship. One they could not sense-radiation from testing of atomic bombs. Further, many of our males lost their lives against a foreign people with whom they did not declare war outside their homeland. We saw the destruction of thousands of Japanese in Hiroshima and Nagasaki. We are horrified that this destruction of another people originated in our homeland.

Unknown to those that fought abroad, their families were being affected by radiation of numerous kinds. They were never told of the effects nor warned during testing of the atomic bombs. To date many of these people have met their demise from various forms of cancer attributed to radiation.

Now the results of radiation has come full circle and is being deposited back in the Shoshone homelands that it originated and as well, so are other forms of highly radiated materials.

This act of genocide is totally irresponsible and is carried out by one of the mightiest nations who have been foremost and constant in their criticism against other countries who act inhumanely against it's own indigenous peoples.

I am aware and have been witness to the many acts of protest against the Department of Energy and the United States efforts to destroy our Western Shoshone Culture. We have actively demonstrated at Yucca Mountain against the storage of radiation and other harmful materials stored in our environmental homeland. This facility has adversely affected our water and will be a detriment against all life for thousands of years. It has no relevance. It must be stopped and it does not belong on Western Shoshone Territory or anywhere in this world.

I have also protested against Yucca Mountain and the transport of radioactive materials through my homeland. Do consider and stop this destruction of my homeland. Please help us to keep our country clean for the future. Protect our future generations yours and mine.

**Response**

Thank you for your comment.